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Draft Environmental Impact Statement/ Environmental Impact Report and Draft Land Use Plan Amendment

Volume II - Appendices

North Baja Pipeline Expansion Project

Federal Energy Regulatory Commission
Washington, DC

California State Lands Commission
Sacramento, CA

Cooperating Agencies:
Bureau of Land Management
Bureau of Reclamation

FERC/EIS-0200D
Docket Nos. CP06-61-000
CP01-23-000

CSLC EIR No. 739
State Clearinghouse No. 2006081127
BLM Reference No. CACA-42662

September 2006

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DRAFT EIS/EIR AND DRAFT LAND USE PLAN AMENDMENT DISTRIBUTION LIST FOR THE NORTH BAJA PIPELINE EXPANSION PROJECT

APPENDIX A

DRAFT EIS/EIR AND DRAFT LAND USE PLAN AMENDMENT DISTRIBUTION LIST

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  - National Oceanic and Atmospheric Administration, National Marine Fisheries Service
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    - Office of Intergovernmental Affairs
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  - Elizabeth Verdecchia
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- Arizona State Land Department
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- Arizona State Parks
  - Public Archaeology Programs
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- Department of Public Safety
  - Curt Knight
- International Boundary Water Commission
  - Al Goff, Project Manager

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- Governor Arnold Schwarzenegger
- California Business, Transportation and Housing Agency
  - The Honorable Sunne Wright McPeak
- California Chamber of Commerce
  - Allan Zaremberg, President and Chief Executive Officer
- California Department of Fish and Game
  - Joe Brana
  - Arturo Delgado, Staff Biologist
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California State Lands Commission
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Department of Parks and Recreation
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Picacho State Recreation Area
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State Board of Food and Agriculture
    Louise K. Willey
State Water Resources Control Board
    Celeste Cantu, Executive Director
    Tom Howard, Chief Deputy Director
    Beth Jines, Chief Deputy Director

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Arizona

La Paz County
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- La Paz County Board of Supervisors
- La Paz County, Public Works
- Pat Wall, Community Development Director (Acting), La Paz County

Yuma County
- Ken Rosevear, Yuma County Chamber of Commerce

California

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- Robertta Burns, County Executive Officer, Imperial County
- Administrative Office, Imperial County
- Victor Carrillo, Imperial County Board of Supervisors
- Harold Carter, Imperial County Sheriff
- Darrell Gardner, Imperial County Planning
- Larry Grogan, Imperial County Board of Supervisors, District 2
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- Jurg Heuberger, Director, I.C. Planning & Development Department, Imperial County
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- Imperial County Historical Society
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- Rosa C. Lopez, Imperial Valley Association of Governments
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- Building and Safety Department, Riverside County
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- Imperial Irrigation District
- Imperial Valley Association of Governments
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Arizona

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Indio Chamber of Commerce, Indio, CA
Indio Planning Department, Indio, CA
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Hemet Public Library, Hemet, CA
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Imperial Public Library, Imperial, CA
City of Rancho Mirage Public Library, Rancho Mirage, CA
Glen Avon Library, Riverside, CA
Palo Verde District Library, Rollins Hills Estates, CA

Media

Bajo El Sol, Yuma, AZ
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KYMA - News Channel 11, Yuma, AZ
Yuma Daily Sun, Yuma, AZ
Palo Verde Valley Times, Blythe, CA
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Meyer Farms, LLC, Yuma, AZ
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Ron Pierce, Range Management Department MCAS, Yuma, AZ

Louis A. Audet, Lorraine Audet, Anaheim, CA
Self Serve Auto Dismantlers, Anaheim, CA
Scaroni Properties, Inc., c/o Linda Scaroni Rossi, Aptos, CA
John Studer, Jr., et al., c/o Barbara Collins, Arroyo Grande, CA
William D. Wilson, Atascadero, CA
Ralph M. Black, Auburn, CA
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Elaine Anzick and Thomas John Newidouski, Blythe, CA
Pratt Apiaries, Blythe, CA
Lawrence and Edith Marie Augusta, Blythe, CA
Clarence Banjamin Baker, Blythe, CA
Kayian Enterpises, Barnes and Berger Farms, Blythe, CA
Celeste Barnett, Blythe, CA
Thomas S. Barnett, Blythe, CA
Jerry Birdsong, Blythe, CA
David B. Brown, Peggy Ann Brown, Stanley W. Stroschein, Eric W. Stroschein, Blythe, CA
Gary A. Bryce, Barbara L. Bryce, Blythe, CA
Gary Bryce, Rio Rancho 2000, LLC, Blythe, CA
Rosalie Ann Campa, Christina Marie Gonzales, Raymond Milton Cox, Blythe, CA
Bobby Carnes and Mary E. Gage, Blythe, CA
Lawrence Chaffin, Chaffin Holdings, Inc., c/o Chaffin Farms, Blythe, CA
Chairel Custom Hay, c/o Jody Johns, Blythe, CA
Gerald J. and Sonja E. Colcun, Blythe, CA
Richard C. and Donna Cox, Blythe, CA
Desert Security Farms, Blythe, CA
Desert Mining Co., Blythe, CA
Richard Dill, Blythe, CA
Richard Dodson and Teresita Cube Mercado, Blythe, CA
William R. Downs, Blythe, CA
Anita Duenes, Blythe, CA
Christina Duenes, Blythe, CA

Organizations and Individuals (cont'd)

Floyd L. Dunagan Trust, c/o Donald Nelson, Trustee, Blythe, CA
Christina Elizalde, Blythe, CA
D & B Fisher, Blythe, CA
Fisher Ranch, Bart Fisher, Fisher Family Properties, Blythe, CA
Fisher Wireless Services, Blythe, CA
William and Sara L. Fletcher, Blythe, CA
Clinton H. Ford, Blythe, CA
Rigo Garnica, Blythe, CA
Gilbert Guilin, Blythe, CA
Betty Gillett, Blythe, CA
Gary Grisamer, Blythe, CA
Chuck Grotke, Blythe, CA
Tonia Grubbs, Blythe, CA
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Roger Henning, Blythe, CA
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The Holt Group, c/o Rob Holt, Blythe, CA
Danny Hughes, Blythe, CA
Mike Jimenez, Blythe, CA
Carl Jones, c/o Eddie Love, Blythe, CA
Kayian Enterprises, Blythe, CA
Kingfisher Corporation, Bart Fisher, Blythe, CA
Don Lange, Blythe, CA
LDS Church, Desert Grain Storage, c/o Steven Vickery, Blythe, CA
Augustus Love, Blythe, CA
Calvin and Sylvia Love, Blythe, CA
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Harold E. Morgan, Blythe, CA
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Randy Rausch, Blythe, CA
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Savelle, Blythe, CA
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Shepwells, Inc., Blythe, CA

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Elton Thatcher, Blythe, CA
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Stephanie D. Todd, Blythe, CA
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Verizon, c/o Mike Firquain, Blythe, CA
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Matthew Wylee, Blythe, CA
John and Monica Wylie, Blythe, CA
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John Heuenber, Brawley, CA
Dennis P. Laybourn, Newmont Mining Corporation, Brawley, CA
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James George, Corona, CA
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Organizations and Individuals (cont'd)

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Ernest F. and Esther L. Strahm, c/o Michael F. Strahm, Holtville, CA
Ernie Strahm and Sons, Inc., Holtville, CA
R.L. and R. Strahm, Holtville, CA
Ralph Strahm, Holtville, CA
W.E. and R.E. and L.F. and R.W. Strahm, c/o Walter Strahm, Holtville, CA
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Jewel S. Vencill, Trustee, Holtville, CA
The Jack Edward Cornwell Estate, c/o James Carlson, Huntington Beach, CA
The M. Jay Kramer Foundation, c/o Barnard B. Kaplan, Huntington Beach, CA
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Juanita Salas, Imperial, CA
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Antonio Ventura, Imperial, CA
Coachella Valley Historical Society, Inc., Indio, CA
Crystal V. Deleon, Indio, CA
Sherry Johnson, Indio Chamber of Commerce, Indio, CA

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Valerie Smith, La Quinta Chamber of Commerce, La Quinta, CA
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Metropolitan Water District of Southern California, c/o Lynn Winkler P.L.S., Los Angeles, CA
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Dov Grajcer, Aquafarms, Mecca, CA
Jeff Jeffredo, Mecca, CA
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Rick Gluck, Morongo Valley, CA
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Gregory Ouellette, Western Pacific Mining Association, Norco, CA
Robert G. Spangler, Norco, CA
David E. Stapp, Norco, CA
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Michael W. Cuff, Ocotillo, CA
Edie and James Harmon, Ocotillo, CA
Imperial Valley College Desert Museum and Society, Ocotillo, CA
Maria L. Rivera, Ontario, CA
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California Turtle and Tortoise Club, Palm Desert, CA
Richard A. Daniels, Eagle Mountain Landfill, Palm Desert, CA
Robert Del Gagnon, Palm Desert, CA
Susan E. Hanley, Palm Desert Chamber of Commerce, Palm Desert, CA
David A. Heveron, The Living Desert, Palm Desert, CA
Bonnie J. Jones, Palm Springs, CA
Kenneth Zachik, Palm Springs, CA
Coco Palms Mobile Home Park, Donna Clinton, Palo Verde, CA
Coco Palms Mobile Home Park, Jeanette Banks, Palo Verde, CA
Bill and Lois Coram, Palo Verde, CA
Frank Dokter, Walters Camp, Inc., Palo Verde, CA
Fort Gaston Historical Museum, Palo Verde, CA
Daniel R. Mueller, Mary E. Mueller, Palo Verde, CA
Jack Seiler Farms, c/o Jack Seiler, Palo Verde, CA
V.S. Chase, L.R. Chase, Virginia S. Chase, Laurence R. Chase, Pasadena, CA
Charles Herach Papaz, Trustee, Pasadena, CA
Michelle M. Cassella, District 37 Off Road, Perris, CA
Dan's Feed and Seed, Inc., John R. Harrison, Perris, CA
Lee Mee Farm, Inc., Perris, CA
Orange Empire Railway Museum, Inc., Perris, CA

Organizations and Individuals (cont'd)

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Grant George, Rancho Cucamonga, CA
Ronald I. Mendez, Paul Perez Mendoza, Thomas and Marsha Frame, Rancho Palos Verdes, CA
Manny Malenez, Redland, CA
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James Bryant, Riverside Municipal Museum, Riverside, CA
Robert Buster, Riverside County Board of Supervisors, Riverside, CA
Michael J. Connor, Ph.D., Desert Tortoise Preserve Committee, Riverside, CA
Ian Davidson, Riverside, CA
Tony Felix, Riverside, CA
Pioneer Historical Society of Riverside, Riverside, CA
County of Riverside, Dept. of Building Services, Riverside, CA
Riverside Co. Regional Park, Open Space Dist, c/o Department Building Services Real Property Division, Riverside, CA
Historical Resources Management Program, University of California Riverside, History Department, Riverside, CA
University of California Riverside, Department of Anthropology, Eastern Information Center, Riverside, CA
Southern California Edison Company, Case Administration, Rosemead, CA
Country Life Mhprv Asset Partners LP, c/o McKay Florence Investments, Roseville, CA
Jim Bramham, Sacramento, CA
Ralph Cordova, Jr., Remy, Thomas, Moose and Manley, LLP, Sacramento, CA
State of California, Department of Fish and Game, Sacramento, CA
Sabrina Teller, Remy, Thomas, Moose and Manley, LLP, Sacramento, CA
JoAnn Yaeger, Remy, Thomas, Moose and Manley, LLP, Sacramento, CA
Benson Todd, et al., c/o Benson Todd, Salinas, CA
Whole Leaf, LLC, Salinas, CA
Sheri Davis, Inland Empire Film Commission, San Bernardino, CA
Caltrans District 8, c/o Dominic Ehirim, San Bernardino, CA
VARP, Inc., San Bernardino, CA
Michael L. Handy and Cheryl Anne Pember, San Bruno, CA
Harriet and Douglas Allen, Desert Protective Council, Inc., San Diego, CA
Dion Leasing LLC, San Diego, CA
EDAW, Rebecca Apple, San Diego, CA
Nick Ervin, Sierra Club, San Diego Chapter, San Diego, CA
Edie Harmon, Sierra Club of San Diego, San Diego, CA
Carl Joseph Maggio, San Diego, CA
Macey L. McMillin, Jr. and Vonnie L. McMillin, Trustees, c/o Mark E. Doyle, San Diego, CA
Joseph J. and Cynthia L. Menvielle, San Diego, CA
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Elise C. Paul, San Diego, CA
Caltrans District 11, c/o Robert Snyder, San Diego, CA
Kristin Ellen Tow, Trustee, San Diego, CA
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Catellus Development Corporation, San Francisco, CA

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Qwest Fiber, Michael Garrison, Santa Fe Springs, CA
Roy Denner, Desert Advisory Council, Santee, CA
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Case Vanderyk, Tipton, CA
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Pete Morton, Ph.D., Resource Economist, The Wilderness Society, Denver, CO
Level 3 Communications, Inc., Tim Donelson, Broomfield, CO
Western Tele-Communications, Inc., Denver, CO
SF Pacific Properties, Inc., c/o Catellus, John Bezzant, Lakewood, CO

Bill Lansinger, Sempra Energy, Washington, DC

Peggy Womack, Project Manager, AT&T Corporation, Atlanta, GA

James Nickerson, TetraTech, Logan, IA

J.D. Lormand, Executive Director, Rocky Mountain Pipeline Construction Association, Lafayette, LA

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Amy Davis, Natural Resource Group, Inc., Minneapolis, MN
Dave Potter, Natural Resource Group, Inc., Minneapolis, MN

J.C. Wight, Trustee, c/o Donald J. Wight, Clancy, MT

Organizations and Individuals (cont'd)

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F.M. Campos, MJM DE Campos, and F.M. Campos, Las Vegas, NV

Burrell F. and Merilyn E. Hammond, Howard, OH

John Cassady, North Baja Pipeline, LLC, Portland, OR
Kim L. Marcus, K. Lowell, and Chrystle M. Vincent, c/o Kim L. Marcus, Portland, OR

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Brian Jones, Trustee, c/o Sherrie Quam (Bruno), Houston, TX
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MCI/World Com, Attn: Investigations, Richardson, TX
Arizona and California Railroad Co., c/o Real Estate Dept., San Antonio, TX

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Dick Southerland, Shirley Southerland, Duck Creek Village, UT
Desert Security Farms, Salt Lake City, UT
Corp of Pres Bishop, Church of Jesus Christ LDS, c/o Tax Division, Salt Lake City, UT
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Dean G. Morris, Springville, UT

Penny Eckert, TetraTech EC, Inc., Bothell, WA

Nancy Ann Altman, Private Canal, South Charleston, WV

APPENDIX B

FACILITY LOCATION MAPS

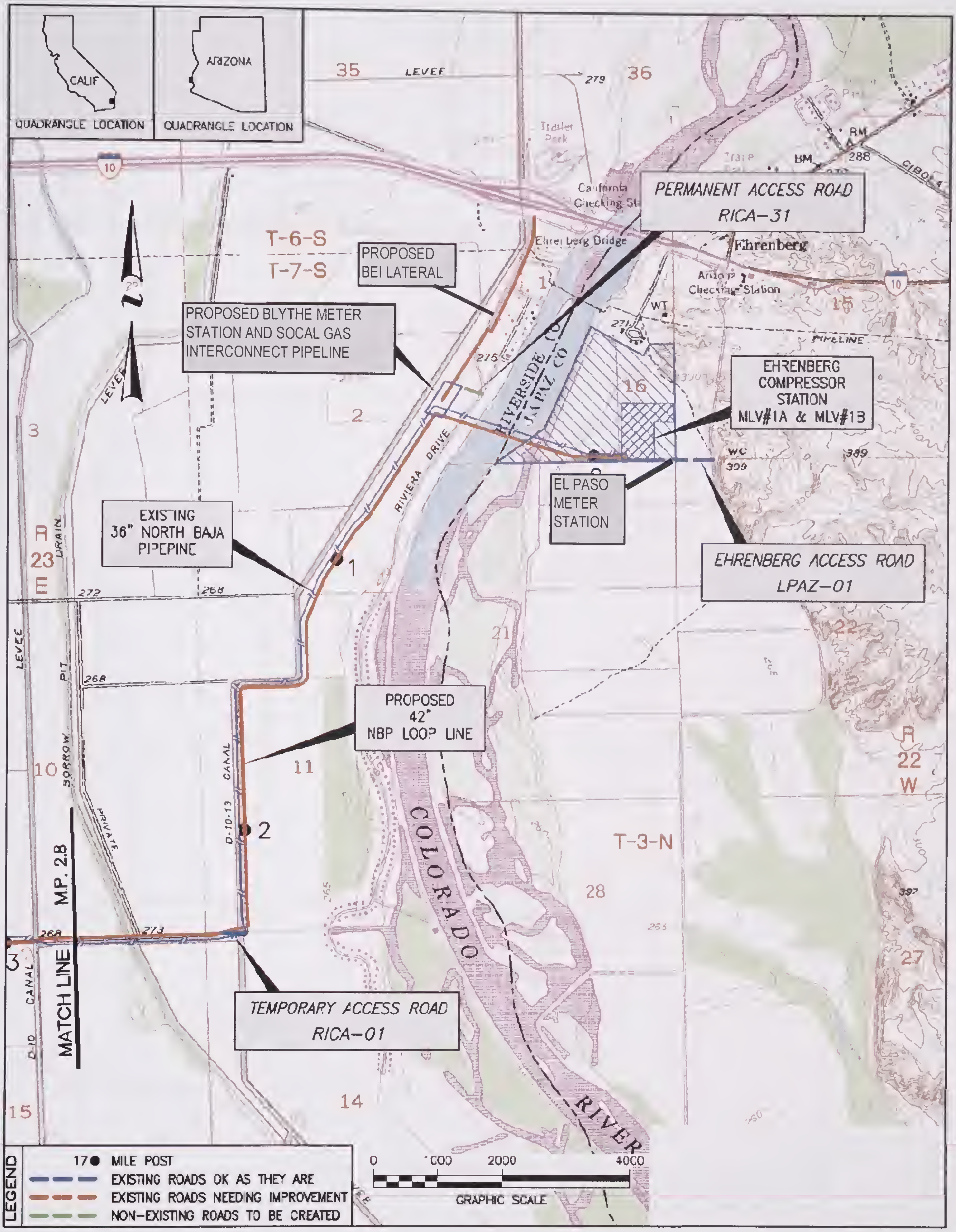


Figure B-1
North Baja Pipeline Expansion Project
BEI Lateral and B-Line
Facility Locations

Sheet 1 of 29

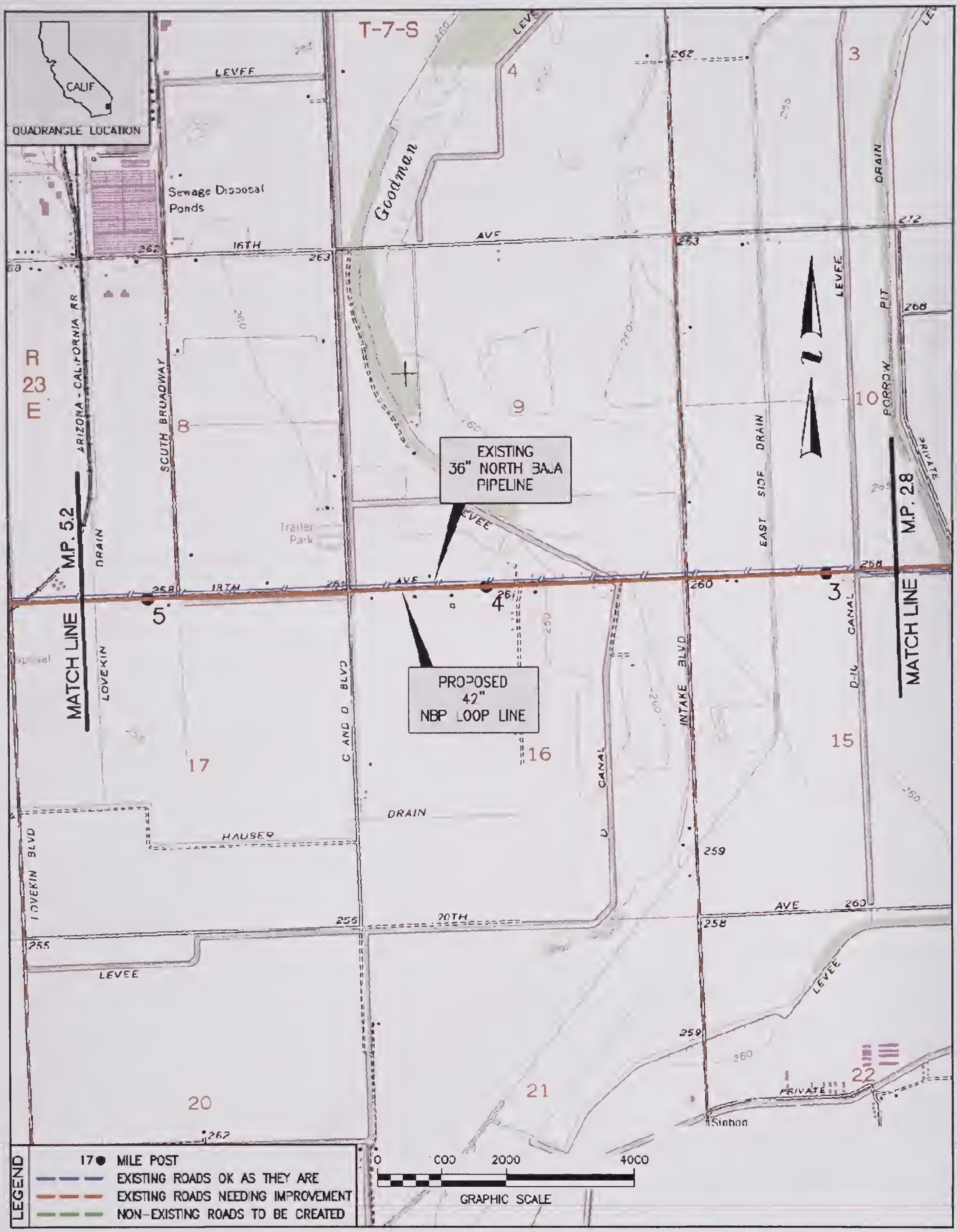


Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

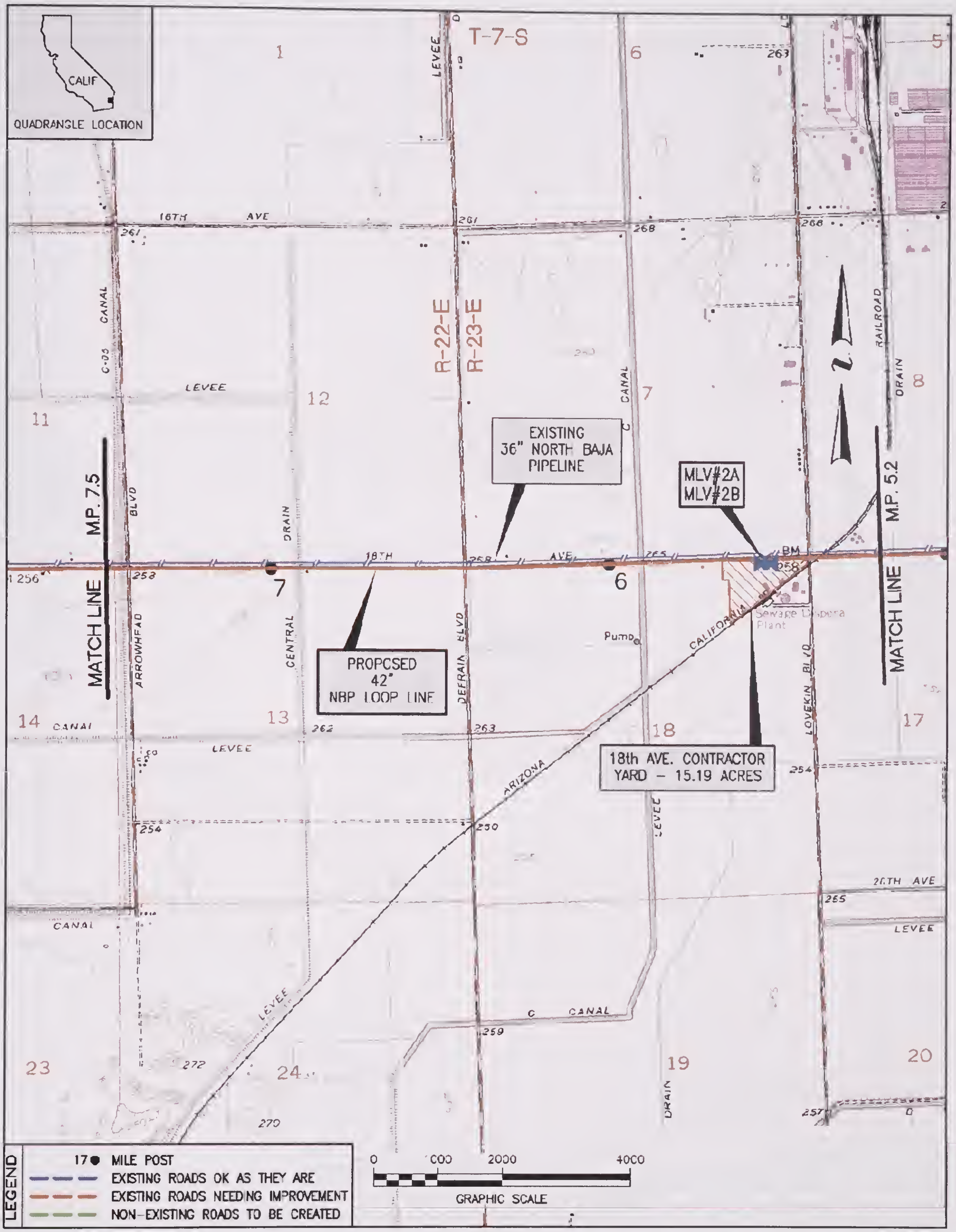


Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

Sheet 3 of 29

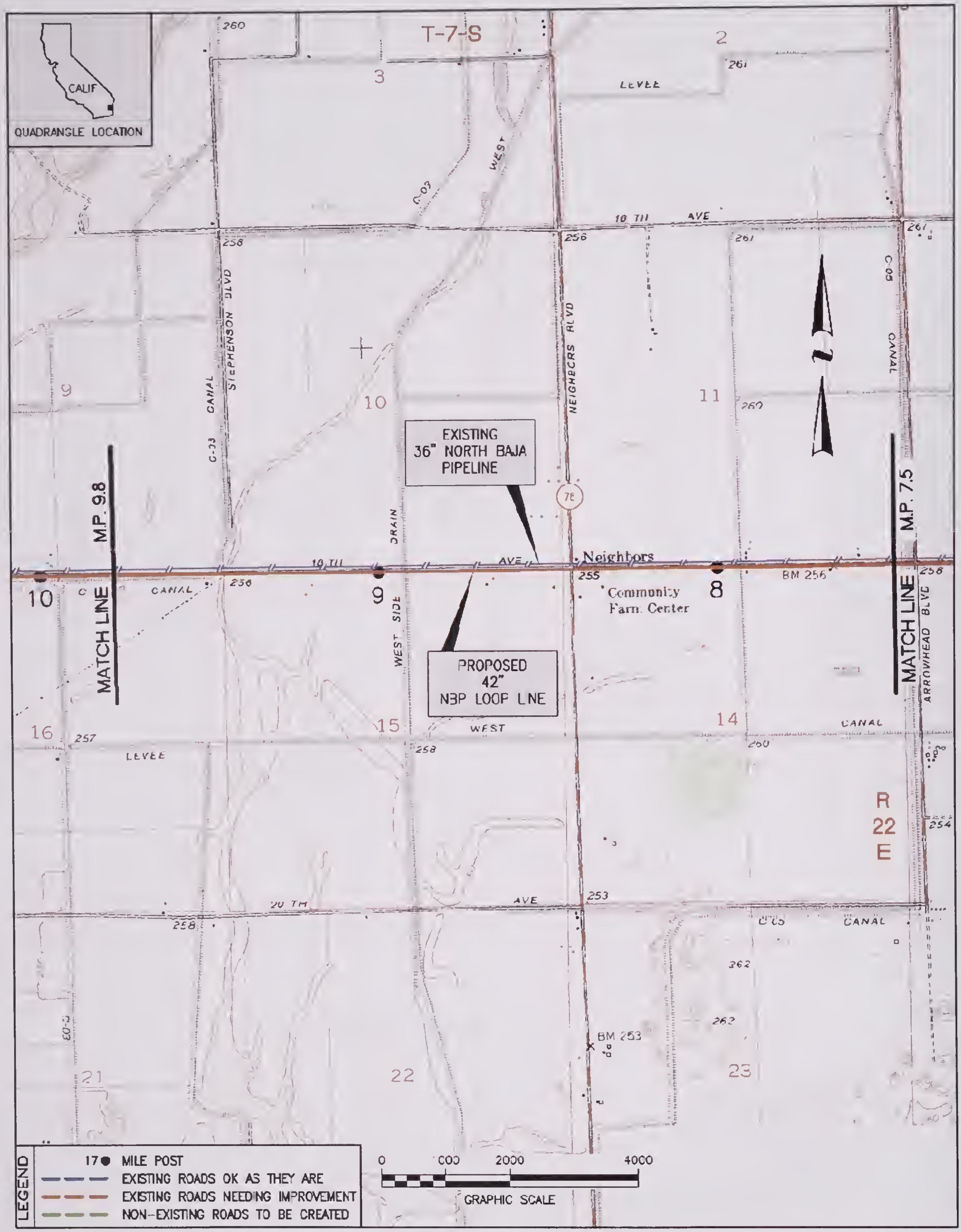


Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

Sheet 4 of 29

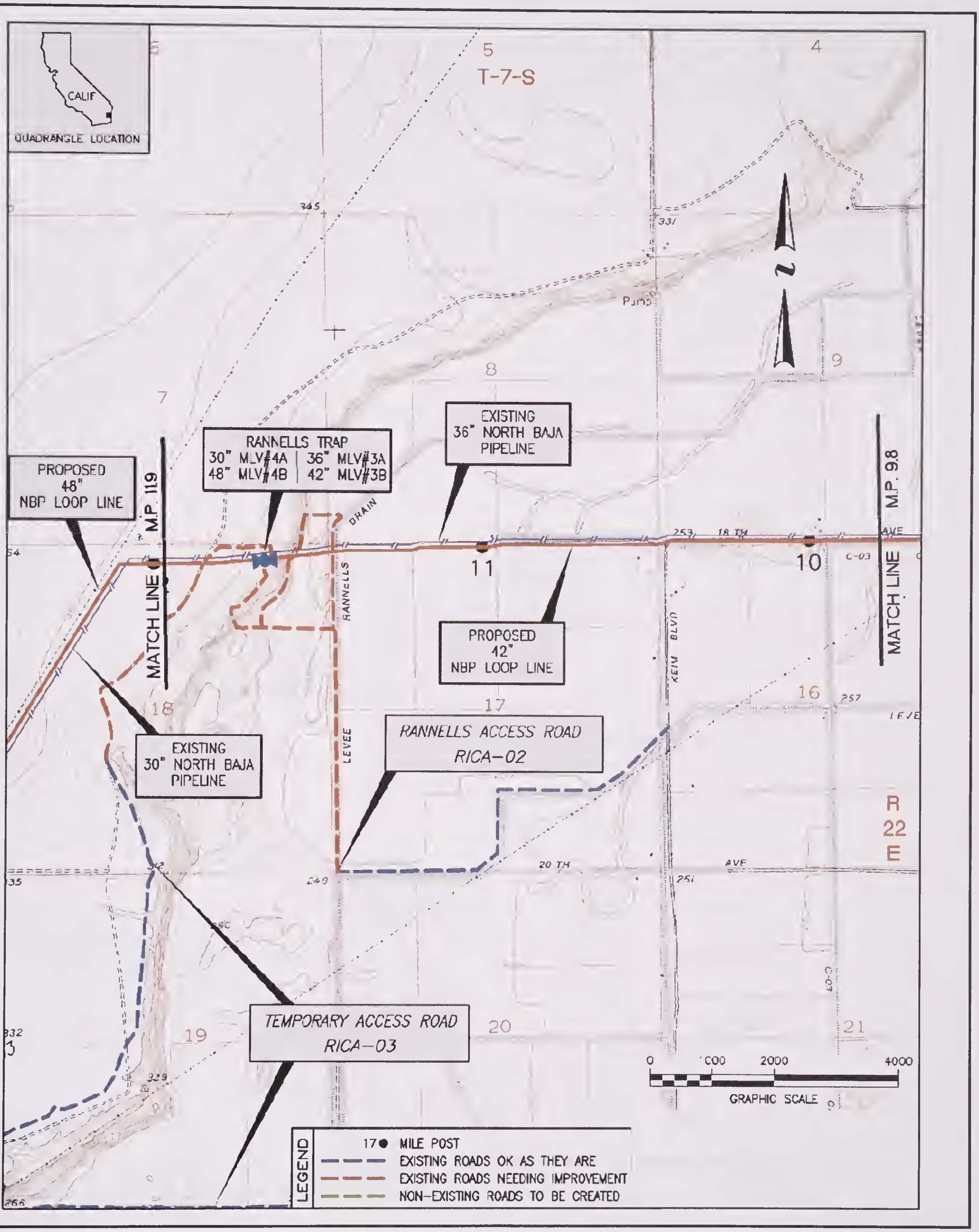


Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

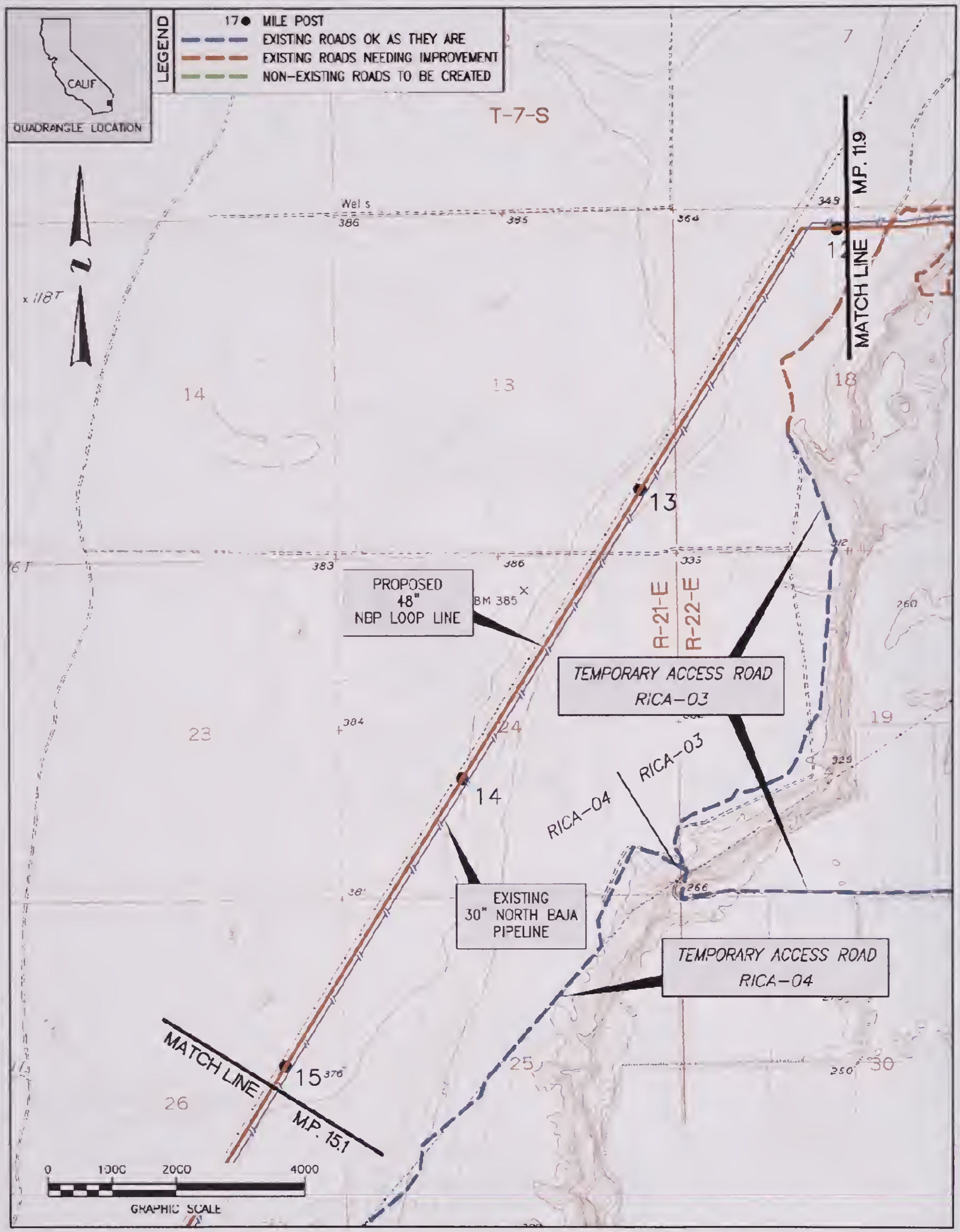


Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

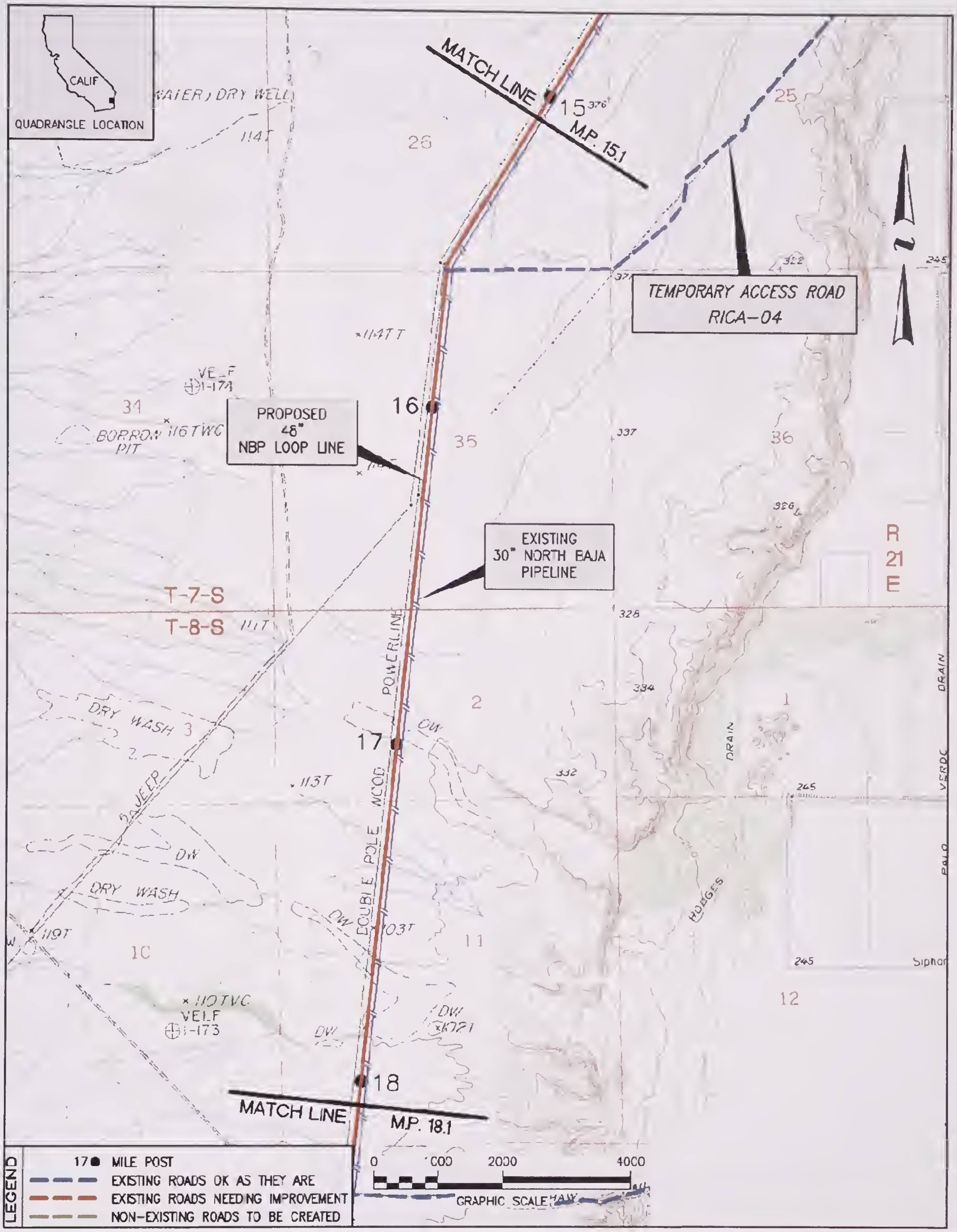


Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

Sheet 7 of 29

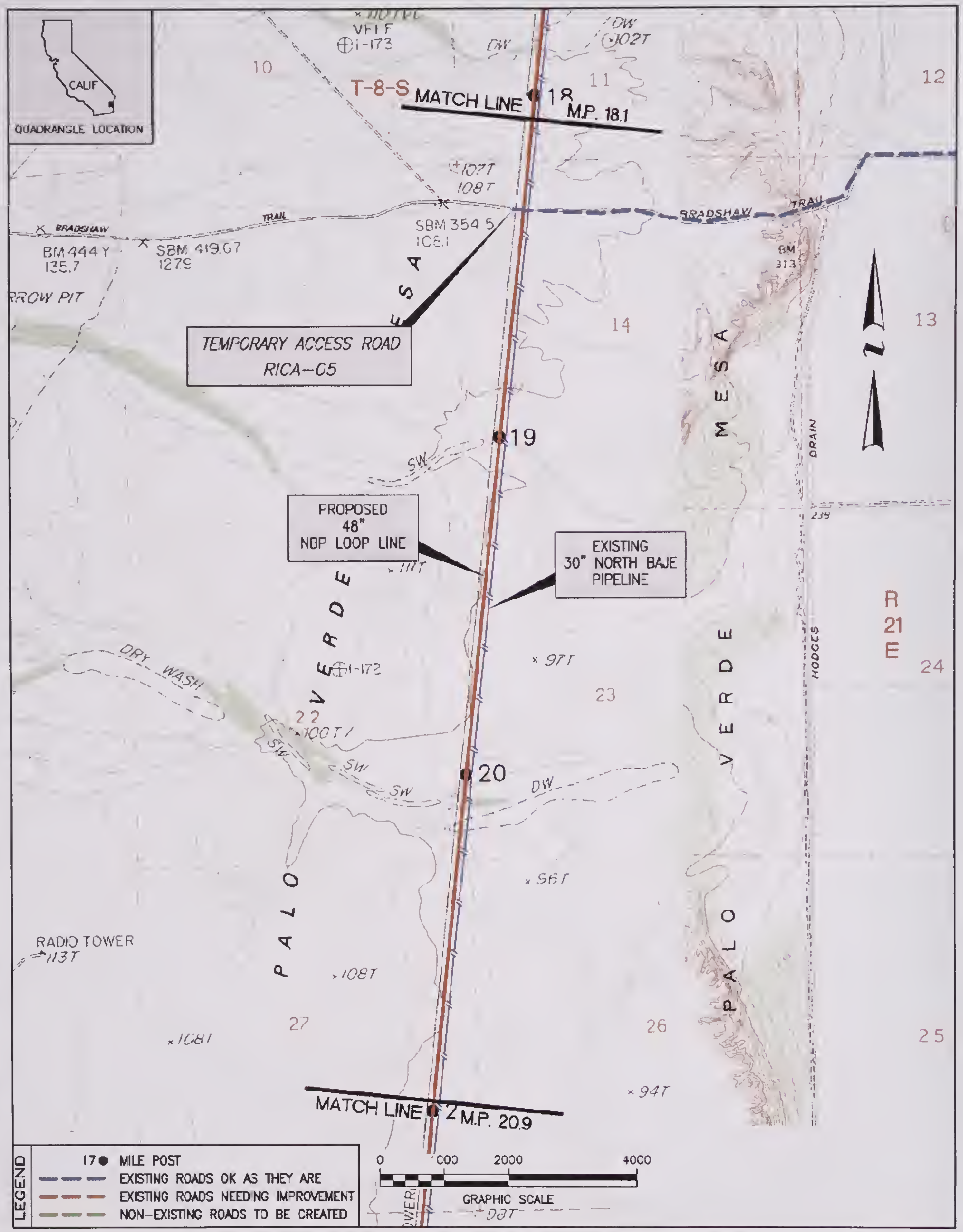


Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

Sheet 8 of 29

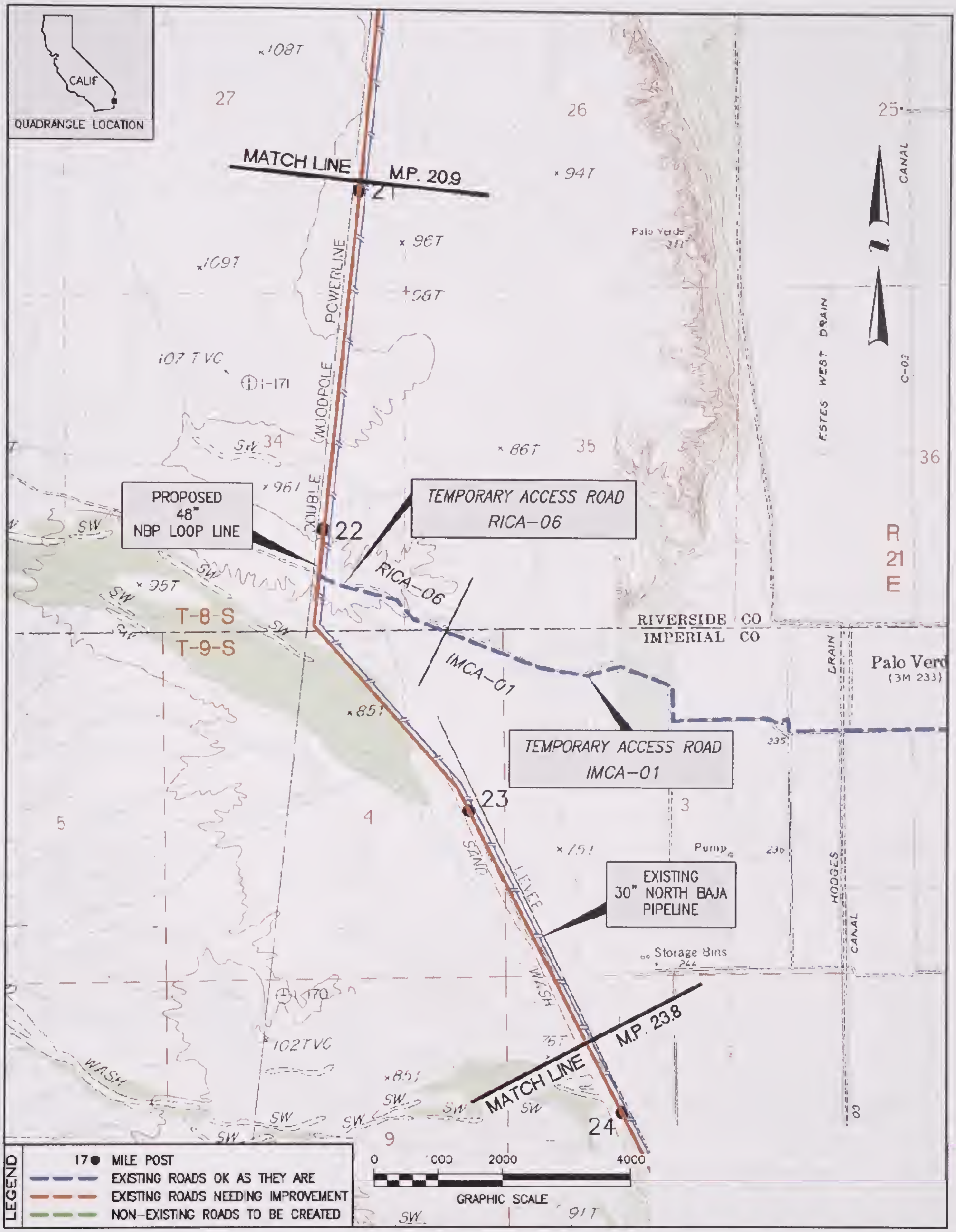


Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

Sheet 9 of 29

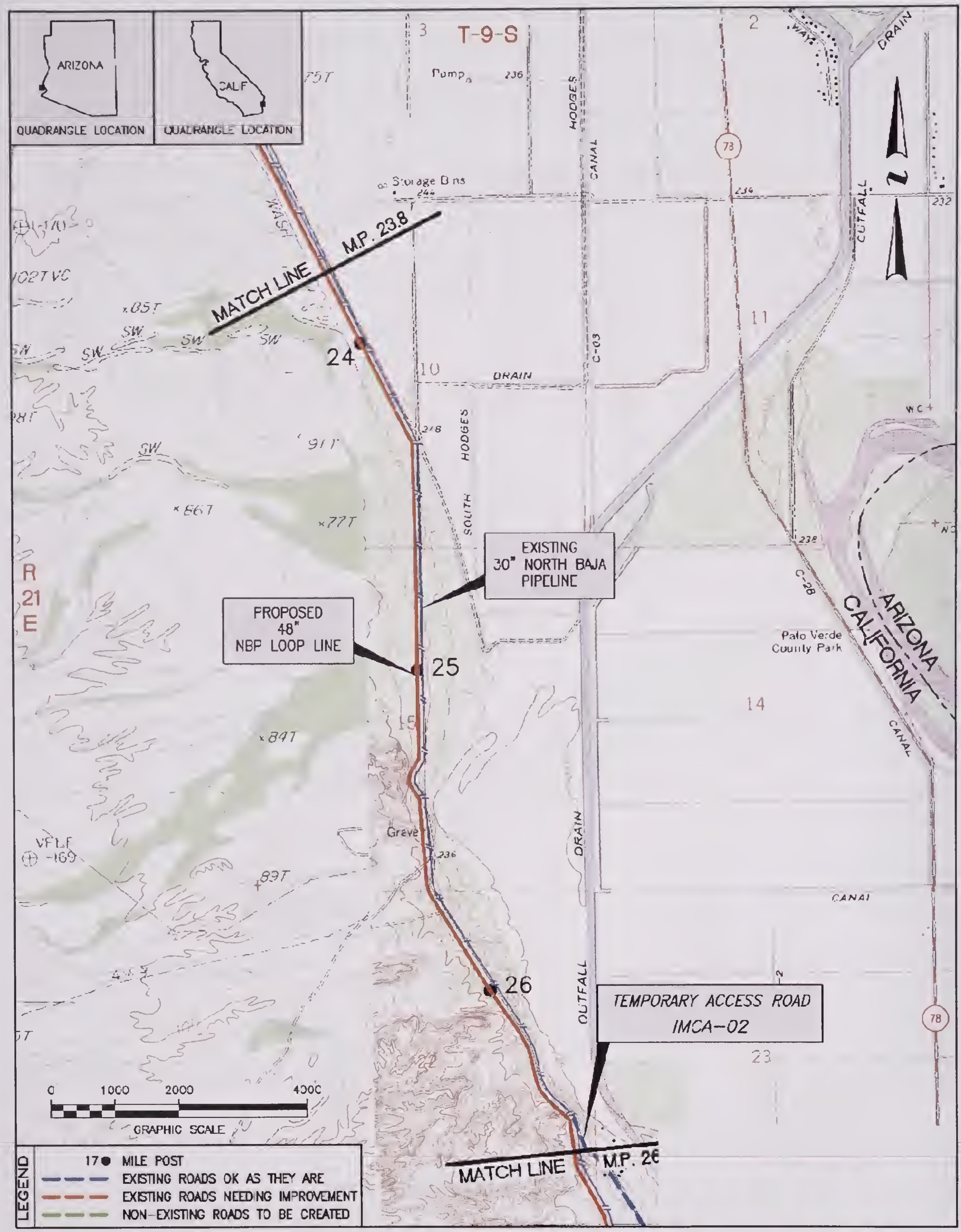


Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

Sheet 10 of 29

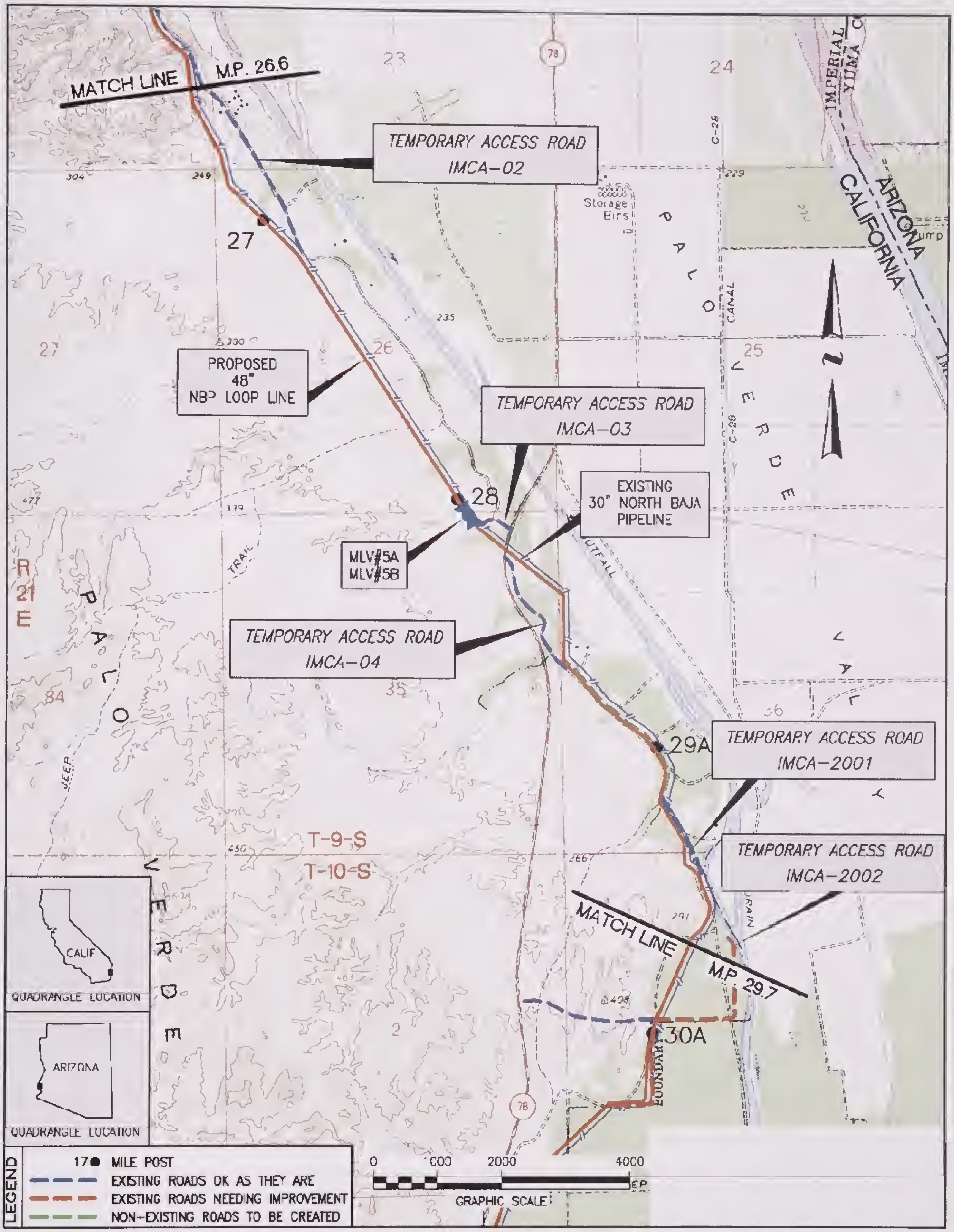

MATCH LINE M.P. 26.6
TEMPORARY ACCESS ROAD IMCA-02
Storage Bins
27
PROPOSED 48" NBP LOOP LINE
TEMPORARY ACCESS ROAD IMCA-03
28
EXISTING 30" NORTH BAJA PIPELINE
MLV#5A MLV#5B
TEMPORARY ACCESS ROAD IMCA-04
29A
TEMPORARY ACCESS ROAD IMCA-2001
TEMPORARY ACCESS ROAD IMCA-2002
MATCH LINE M.P. 29.7
30A
PALO VERDE
PALO VERDE VALLEY
ARIZONA
CALIFORNIA
IMPERIAL
YUMA
CANAL
OUTFALL
TRAIL
JEEP
BOUNDARY
DRAIN
78
R 21 E
T-9-S
T-10-S
23
24
25
26
27
34
35
36
2
CALIF
QUADRANGLE LOCATION
ARIZONA
QUADRANGLE LOCATION
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED
0
1000
2000
4000
GRAPHIC SCALE

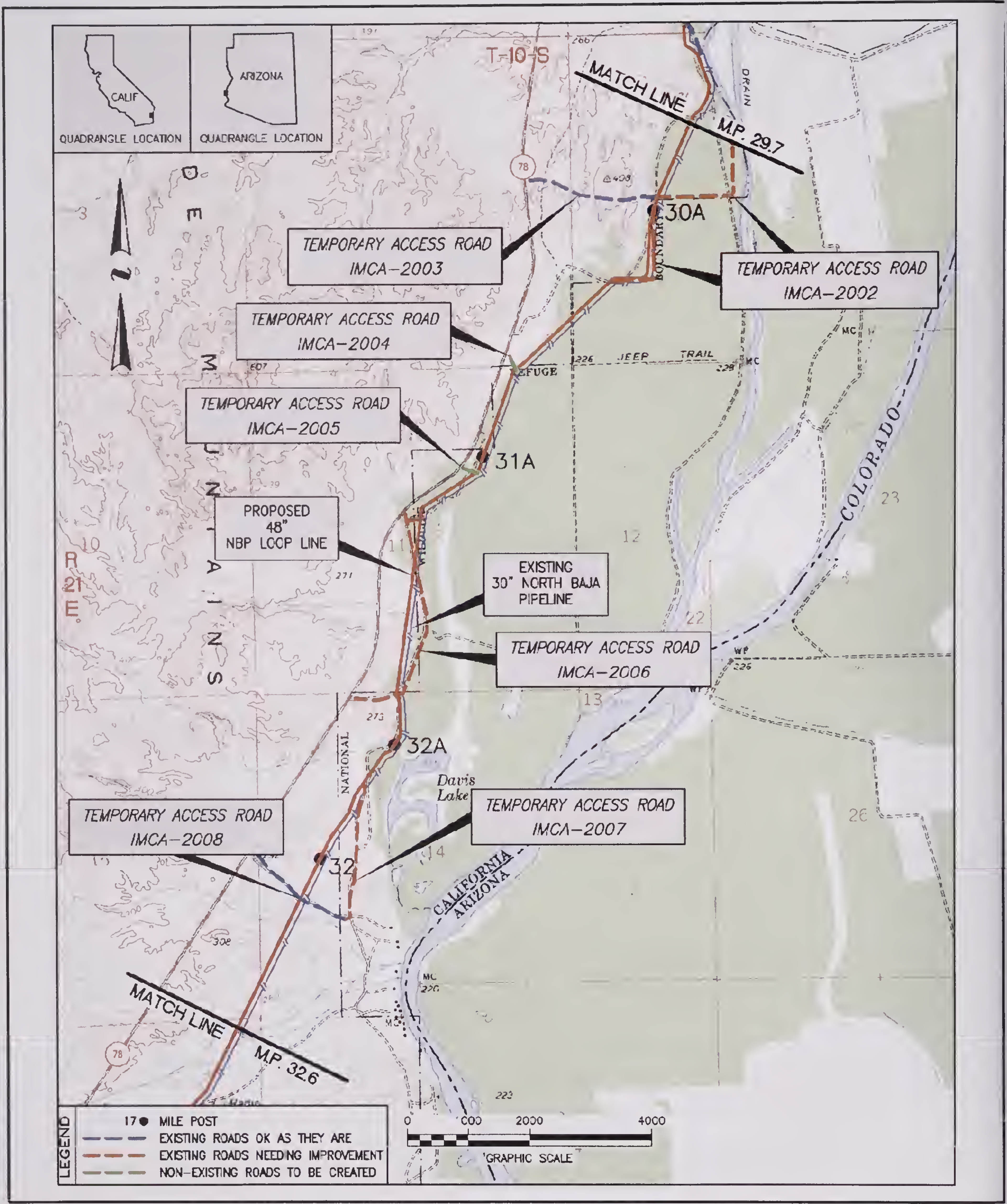
Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

Sheet 11 of 29



CALIF
QUADRANGLE LOCATION
ARIZONA
QUADRANGLE LOCATION
T-10-S
MATCH LINE
M.P. 29.7
DRAIN
78
30A
BOUNDARY
TEMPORARY ACCESS ROAD IMCA-2003
TEMPORARY ACCESS ROAD IMCA-2002
TEMPORARY ACCESS ROAD IMCA-2004
JEEP TRAIL
REFUGE
TEMPORARY ACCESS ROAD IMCA-2005
31A
PROPOSED 48" NBP LOOP LINE
EXISTING 30" NORTH BAJA PIPELINE
COLORADO
12
22
23
R 21 E.
M U N I A N S
TEMPORARY ACCESS ROAD IMCA-2006
13
NATIONAL
32A
Davis Lake
TEMPORARY ACCESS ROAD IMCA-2007
TEMPORARY ACCESS ROAD IMCA-2008
32
CALIFORNIA
ARIZONA
26
MATCH LINE
M.P. 32.6
78
LEGEND
17 ● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED
0
1000
2000
4000
GRAPHIC SCALE

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

Sheet 12 of 29

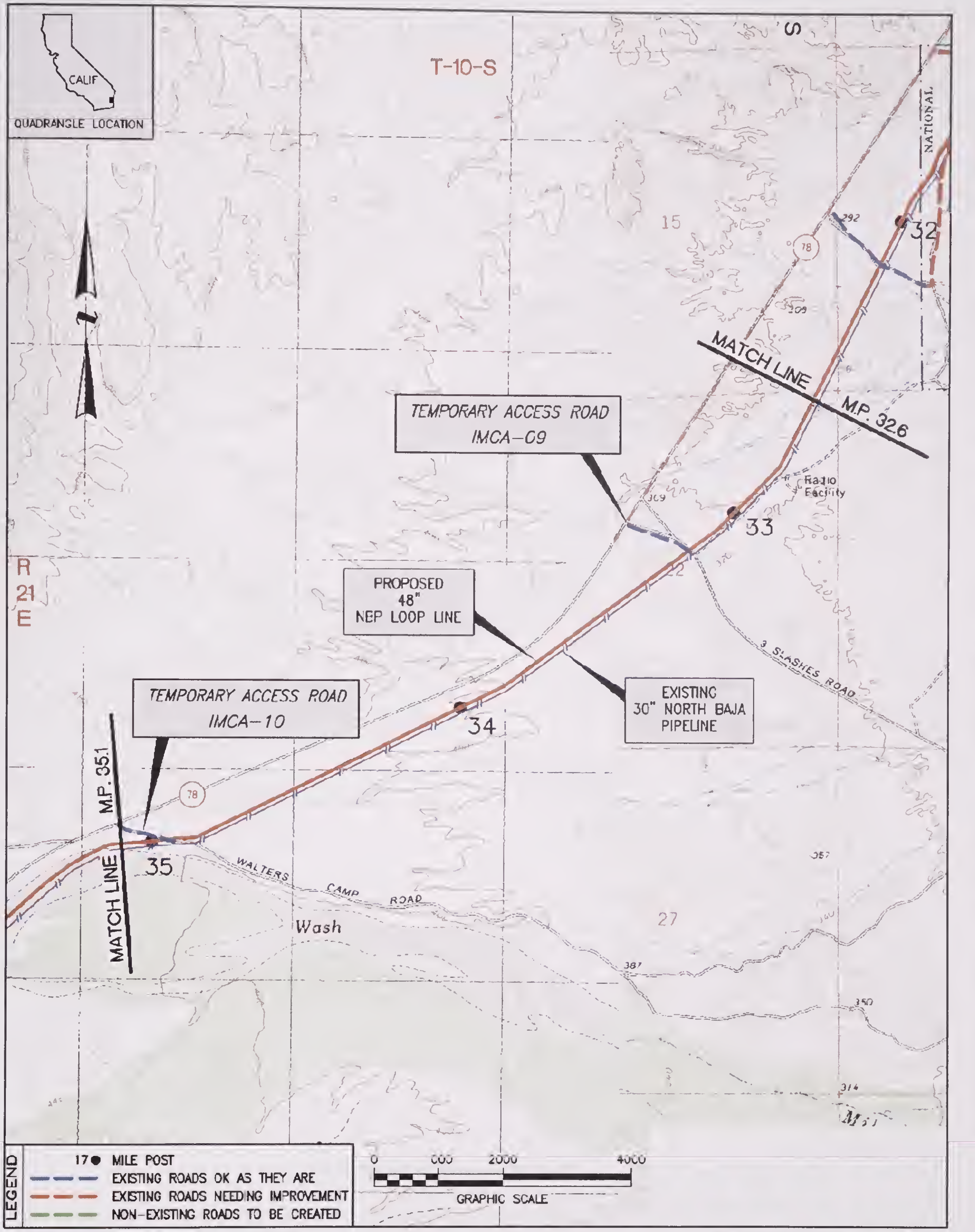

CALIF
QUADRANGLE LOCATION
T-10-S
S
NATIONAL
15
78
292
32
309
MATCH LINE
M.P. 32.6
TEMPORARY ACCESS ROAD IMCA-09
Radio Facility
33
22
R 21 E
PROPOSED 48" NBP LOOP LINE
EXISTING 30" NORTH BAJA PIPELINE
3 SLASHES ROAD
TEMPORARY ACCESS ROAD IMCA-10
34
78
M.P. 35.1
MATCH LINE
35
WALTERS CAMP ROAD
Wash
27
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED
0
1000
2000
4000
GRAPHIC SCALE

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

Sheet 13 of 29

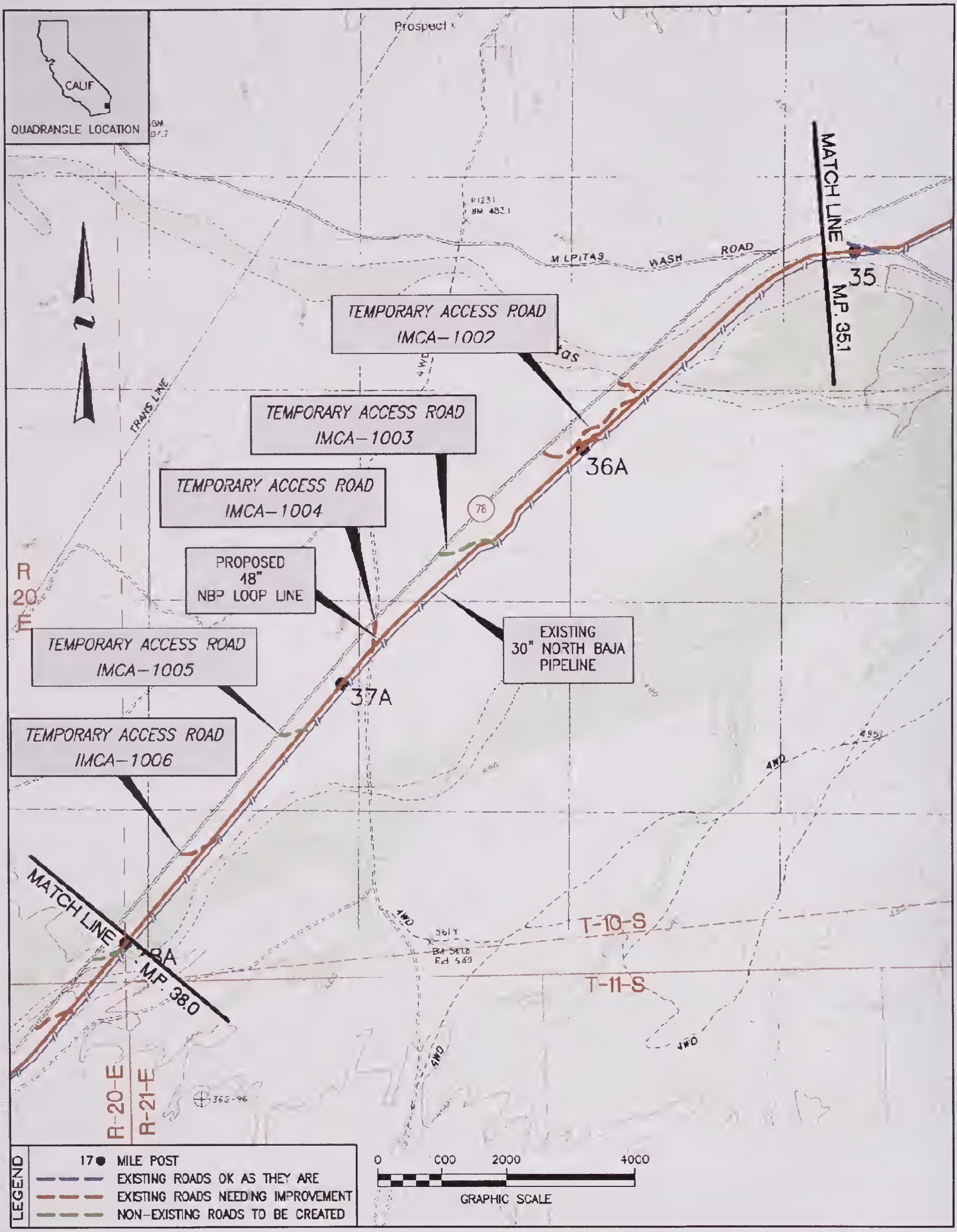


Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

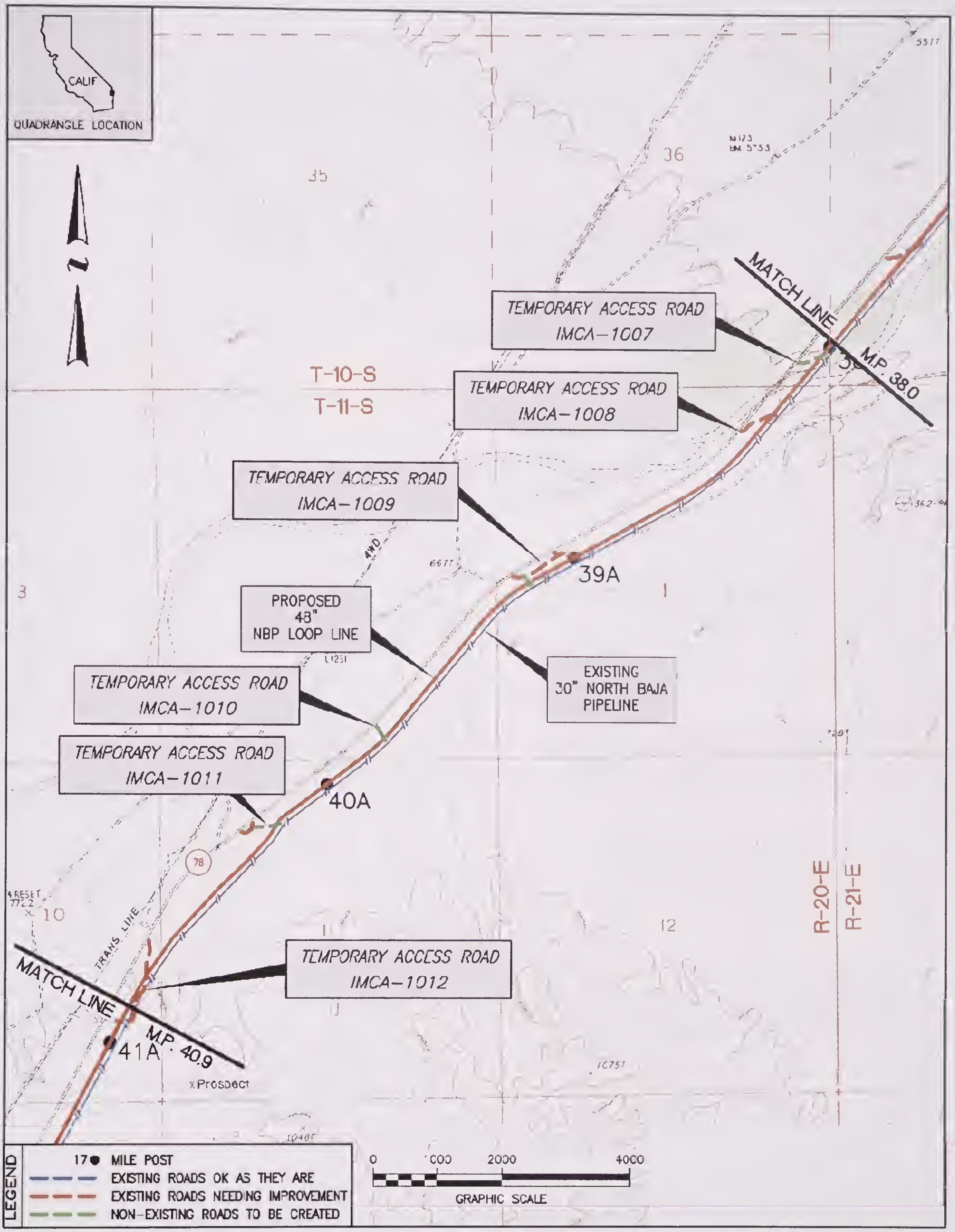

CALIF
QUADRANGLE LOCATION
N
35
36
3
1
10
12
T-10-S
T-11-S
R-20-E
R-21-E
TEMPORARY ACCESS ROAD IMCA-1007
TEMPORARY ACCESS ROAD IMCA-1008
TEMPORARY ACCESS ROAD IMCA-1009
TEMPORARY ACCESS ROAD IMCA-1010
TEMPORARY ACCESS ROAD IMCA-1011
TEMPORARY ACCESS ROAD IMCA-1012
PROPOSED 48" NBP LOOP LINE
EXISTING 30" NORTH BAJA PIPELINE
MATCH LINE
M.P. 38.0
MATCH LINE
M.P. 40.9
39A
40A
41A
78
4WD
TRANS. LINE
xProspect
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED
0
1000
2000
4000
GRAPHIC SCALE

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

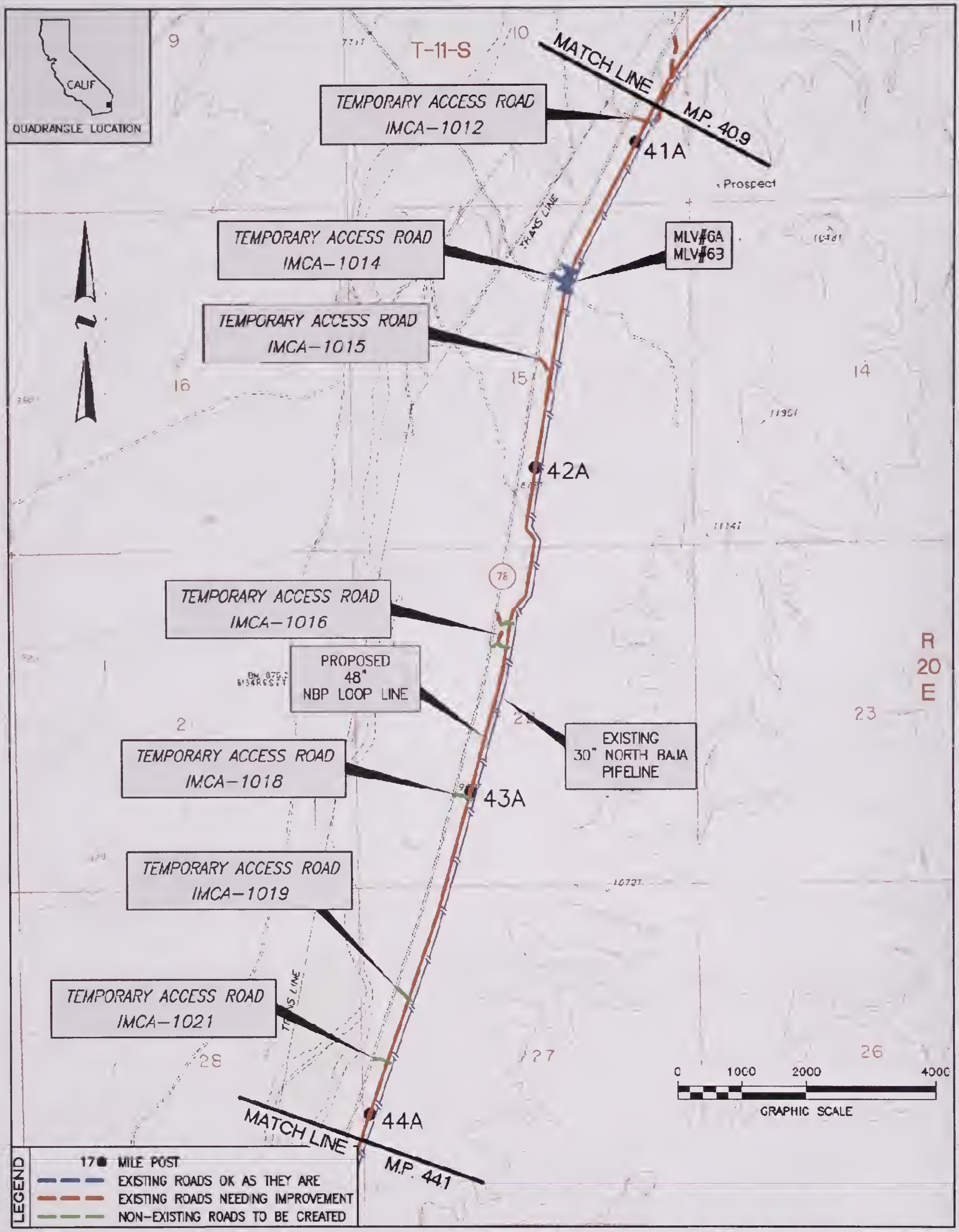

CALIF
QUADRANGLE LOCATION
T-11-S
9
10
11
MATCH LINE
M.P. 40.9
TEMPORARY ACCESS ROAD IMCA–1012
41A
Prospect
TRANS LINE
TEMPORARY ACCESS ROAD IMCA–1014
MLV#6A
MLV#63
TEMPORARY ACCESS ROAD IMCA–1015
16
15
14
42A
78
TEMPORARY ACCESS ROAD IMCA–1016
PROPOSED 48" NBP LOOP LINE
R 20 E
2
22
23
EXISTING 30" NORTH BAJA PIPELINE
TEMPORARY ACCESS ROAD IMCA–1018
43A
TEMPORARY ACCESS ROAD IMCA–1019
TEMPORARY ACCESS ROAD IMCA–1021
TRANS LINE
28
27
26
0
1000
2000
4000
GRAPHIC SCALE
44A
MATCH LINE
M.P. 441
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

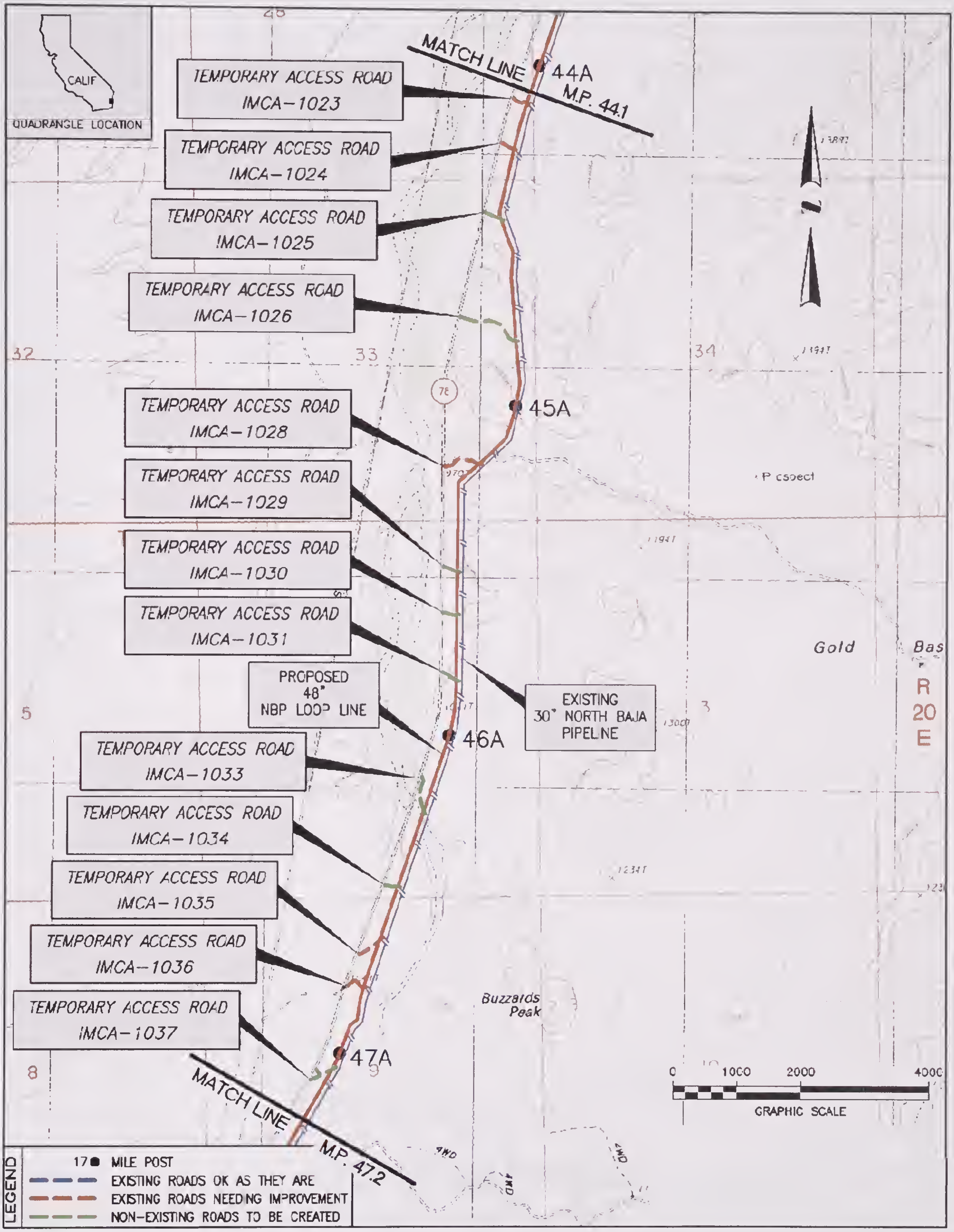

CALIF
QUADRANGLE LOCATION
MATCH LINE
44A
M.P. 44.1
TEMPORARY ACCESS ROAD IMCA-1023
TEMPORARY ACCESS ROAD IMCA-1024
TEMPORARY ACCESS ROAD IMCA-1025
TEMPORARY ACCESS ROAD IMCA-1026
32
33
34
78
45A
TEMPORARY ACCESS ROAD IMCA-1028
TEMPORARY ACCESS ROAD IMCA-1029
TEMPORARY ACCESS ROAD IMCA-1030
TEMPORARY ACCESS ROAD IMCA-1031
Gold
Bas
PROPOSED 48" NBP LOOP LINE
EXISTING 30" NORTH BAJA PIPELINE
46A
5
3
R 20 E
TEMPORARY ACCESS ROAD IMCA-1033
TEMPORARY ACCESS ROAD IMCA-1034
TEMPORARY ACCESS ROAD IMCA-1035
TEMPORARY ACCESS ROAD IMCA-1036
TEMPORARY ACCESS ROAD IMCA-1037
Buzzards Peak
47A
8
9
MATCH LINE
M.P. 47.2
0
1000
2000
4000
GRAPHIC SCALE
4WD
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

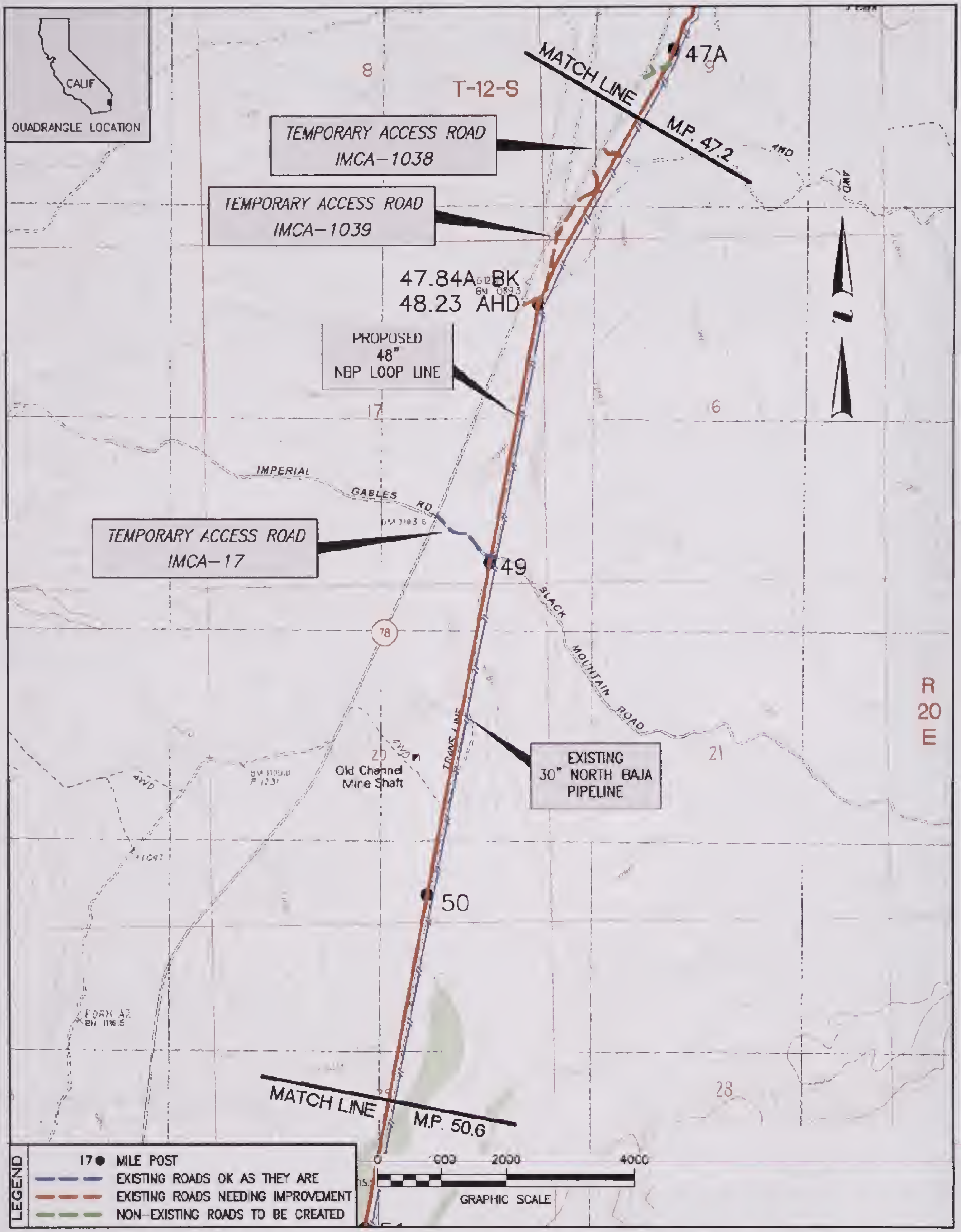


Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

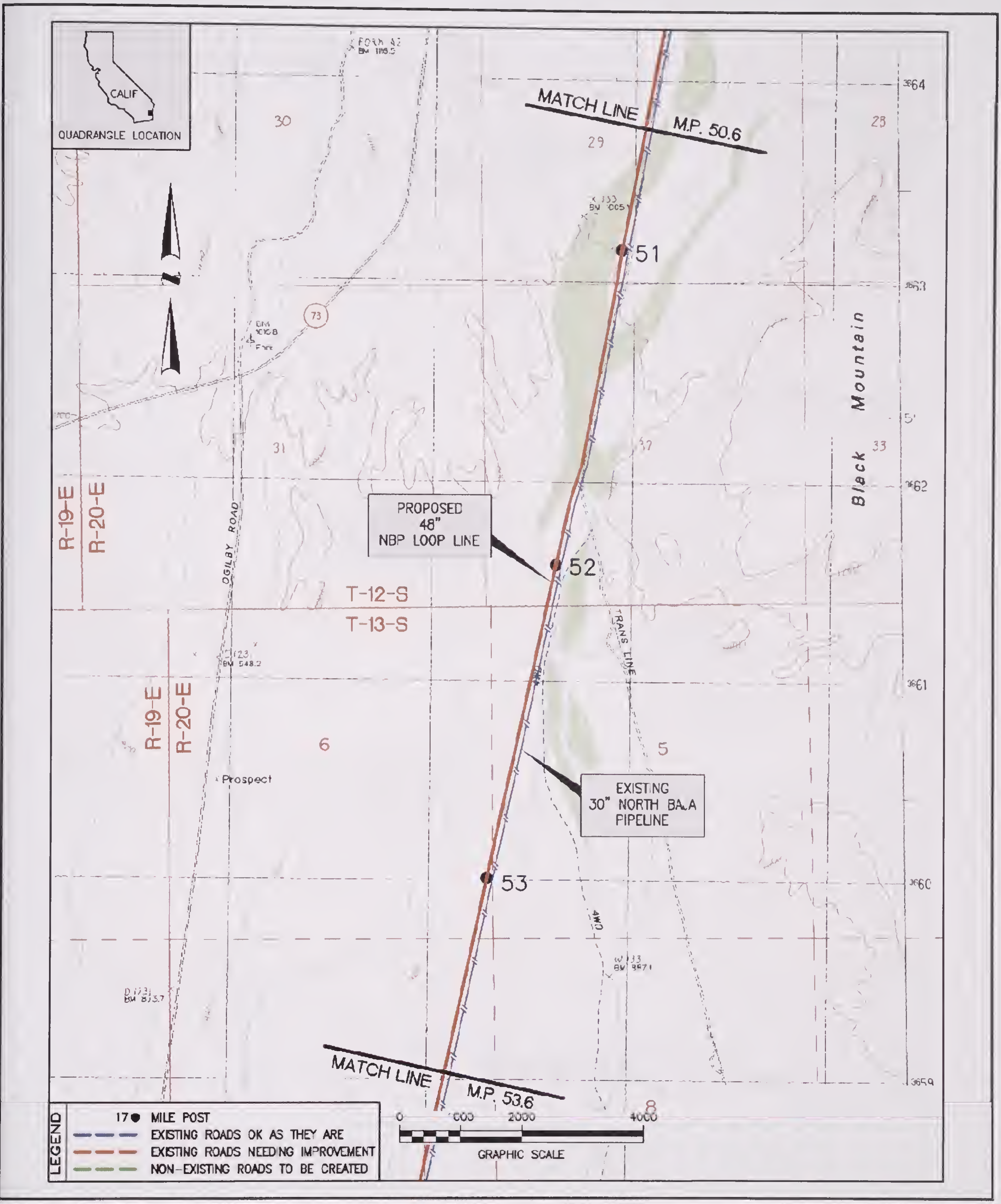


Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

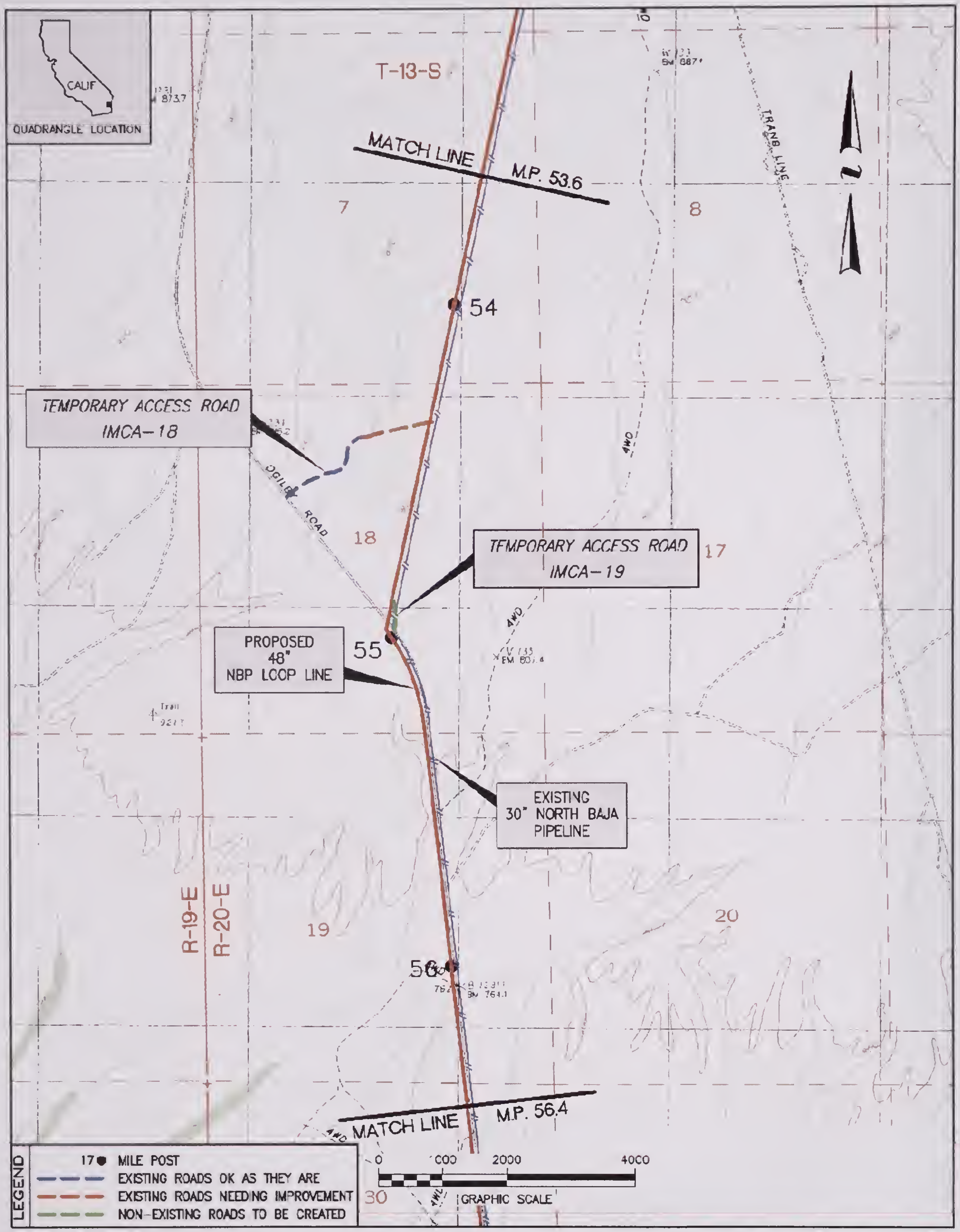

CALIF
QUADRANGLE LOCATION
T-13-S
MATCH LINE
M.P. 53.6
TRANS LINE
7
8
54
TEMPORARY ACCESS ROAD IMCA-18
OGILBY ROAD
4WD
18
TEMPORARY ACCESS ROAD IMCA-19
17
PROPOSED 48" NBP LOOP LINE
55
4WD
EXISTING 30" NORTH BAJA PIPELINE
R-19-E
R-20-E
19
20
56
MATCH LINE
M.P. 56.4
4WD
30
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED
0
1000
2000
4000
GRAPHIC SCALE

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

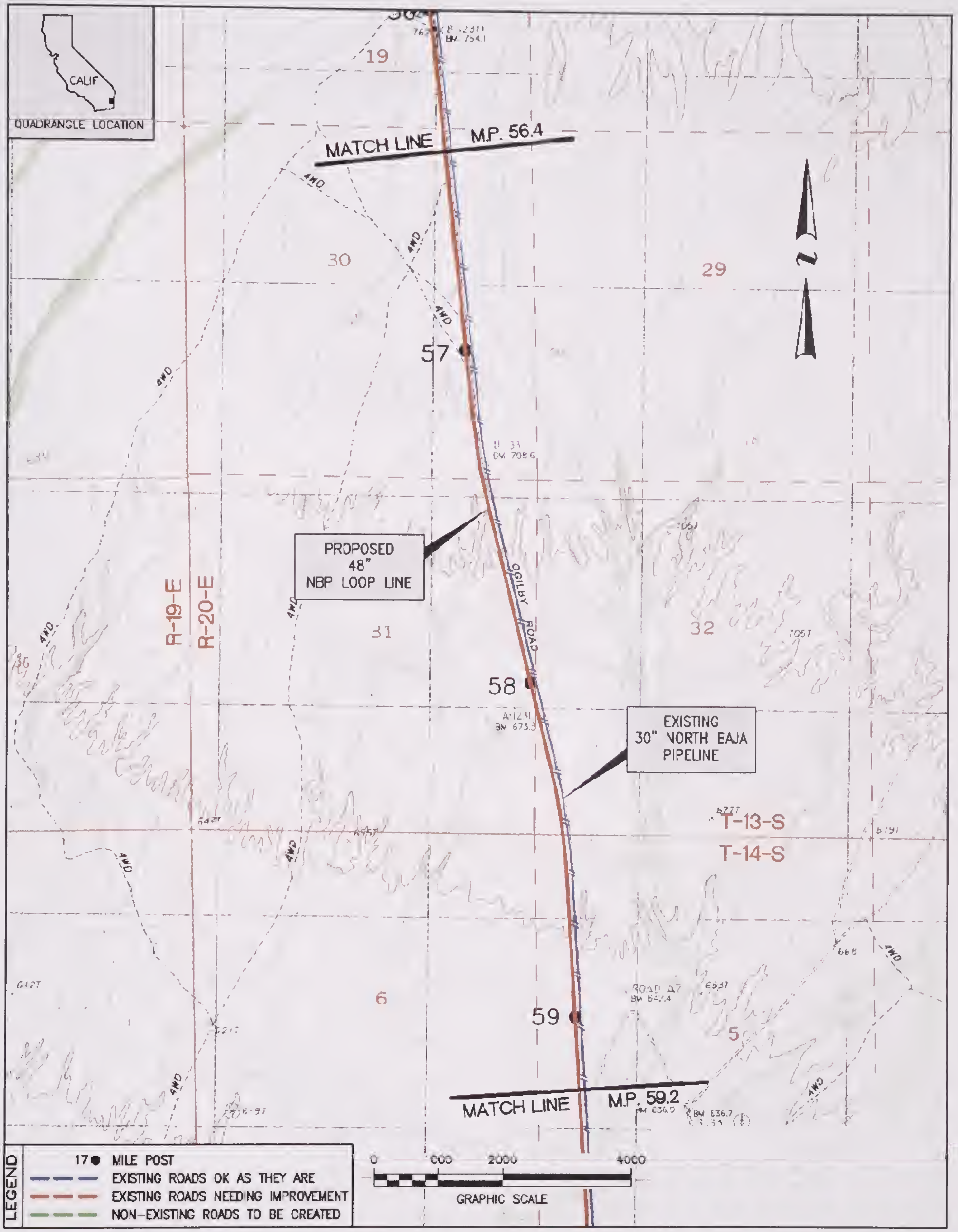


Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

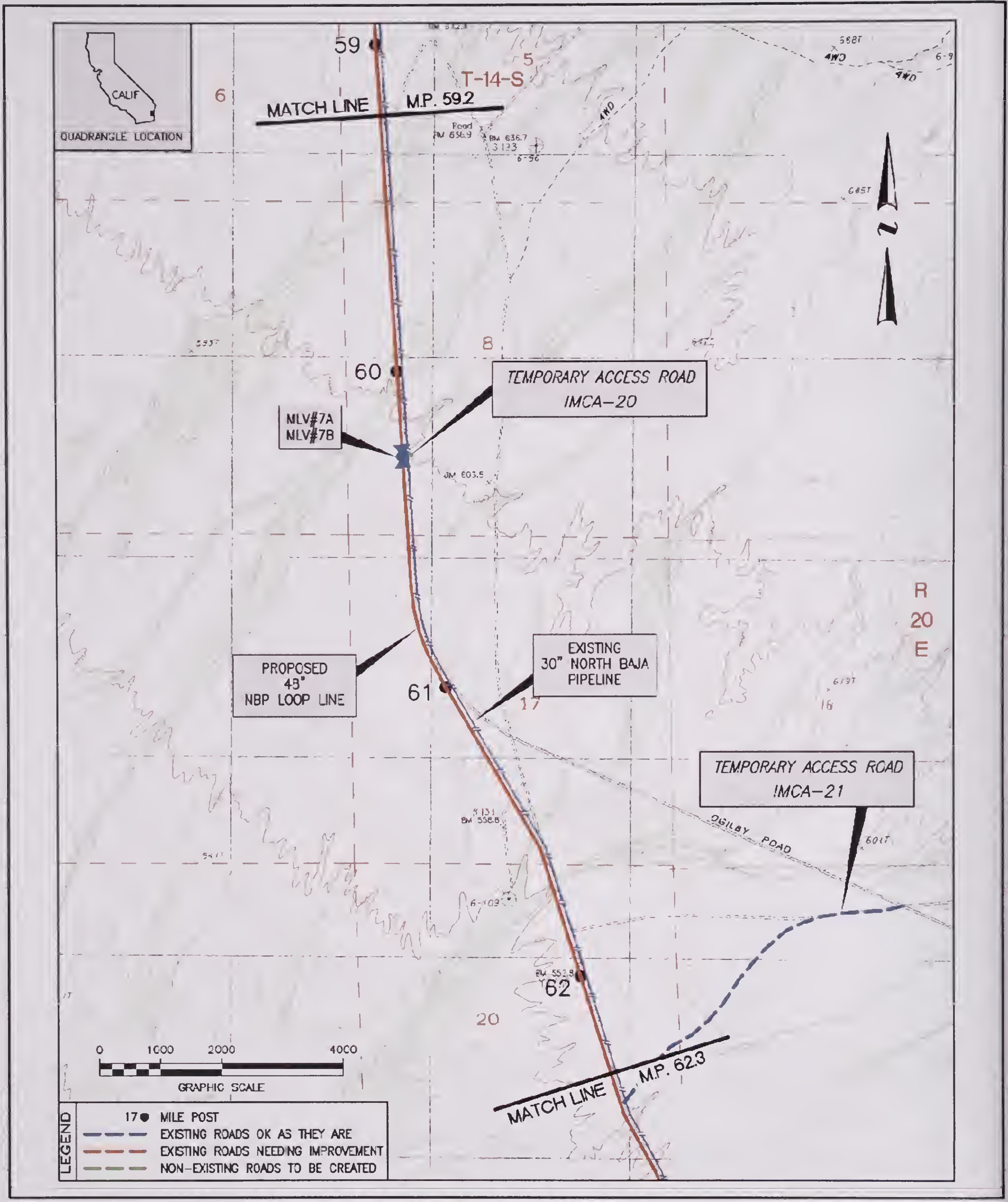

CALIF
QUADRANGLE LOCATION
59
60
61
62
MATCH LINE M.P. 59.2
MATCH LINE M.P. 62.3
T-14-S
R 20 E
5
6
8
16
17
20
TEMPORARY ACCESS ROAD IMCA-20
TEMPORARY ACCESS ROAD IMCA-21
MLV#7A
MLV#7B
PROPOSED 48" NBP LOOP LINE
EXISTING 30" NORTH BAJA PIPELINE
OGILBY ROAD
4WD
0
1000
2000
4000
GRAPHIC SCALE
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED

Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

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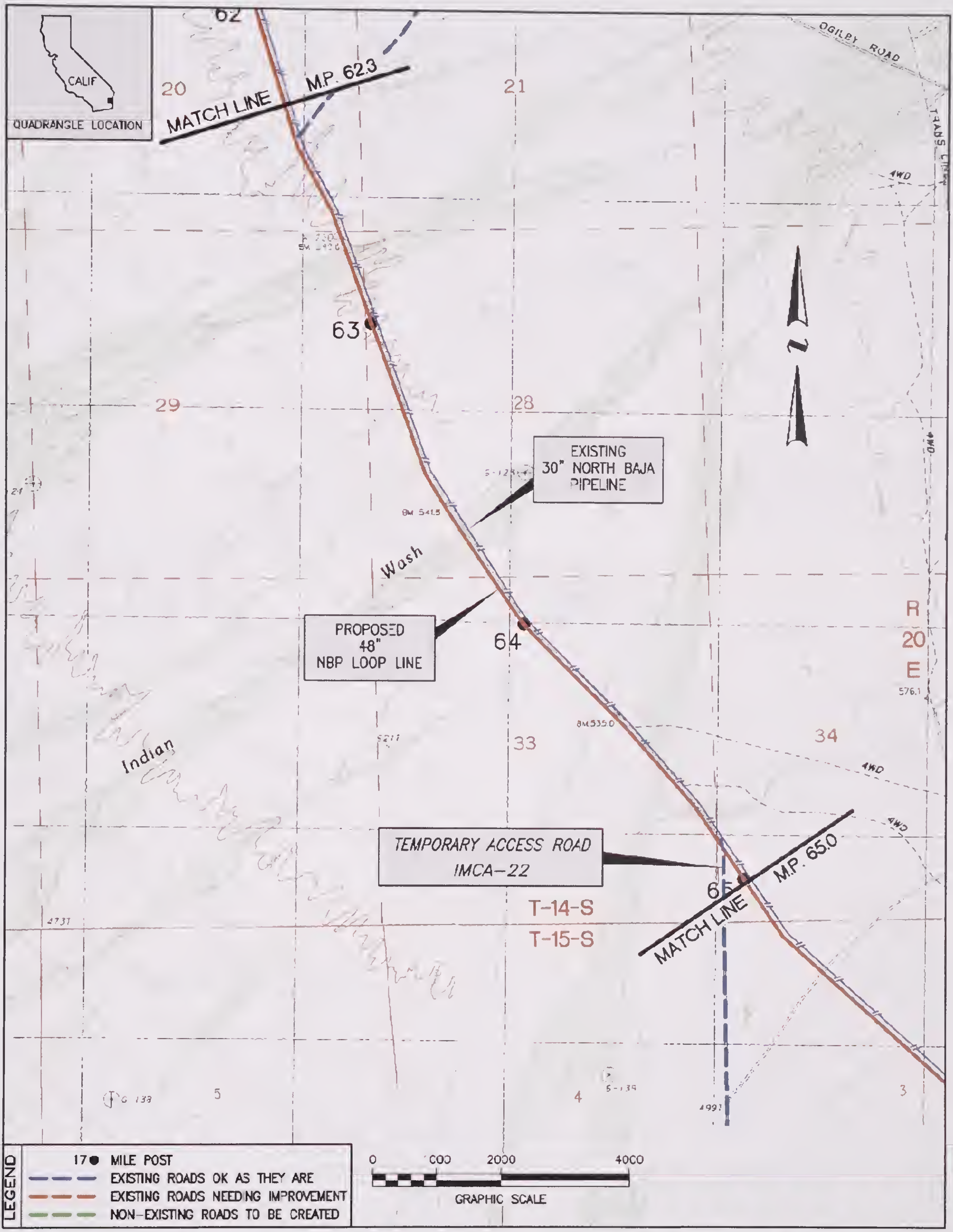

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

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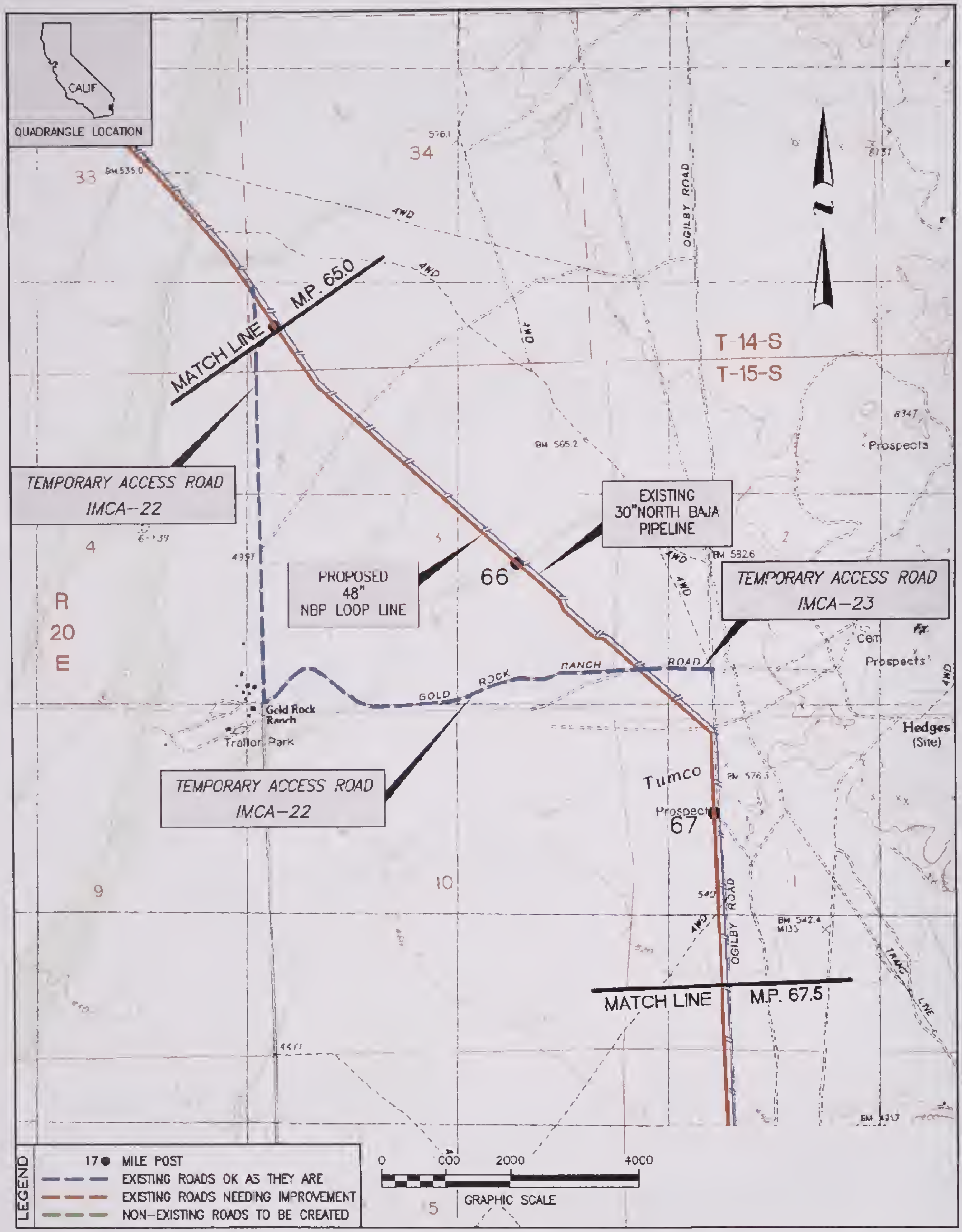

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

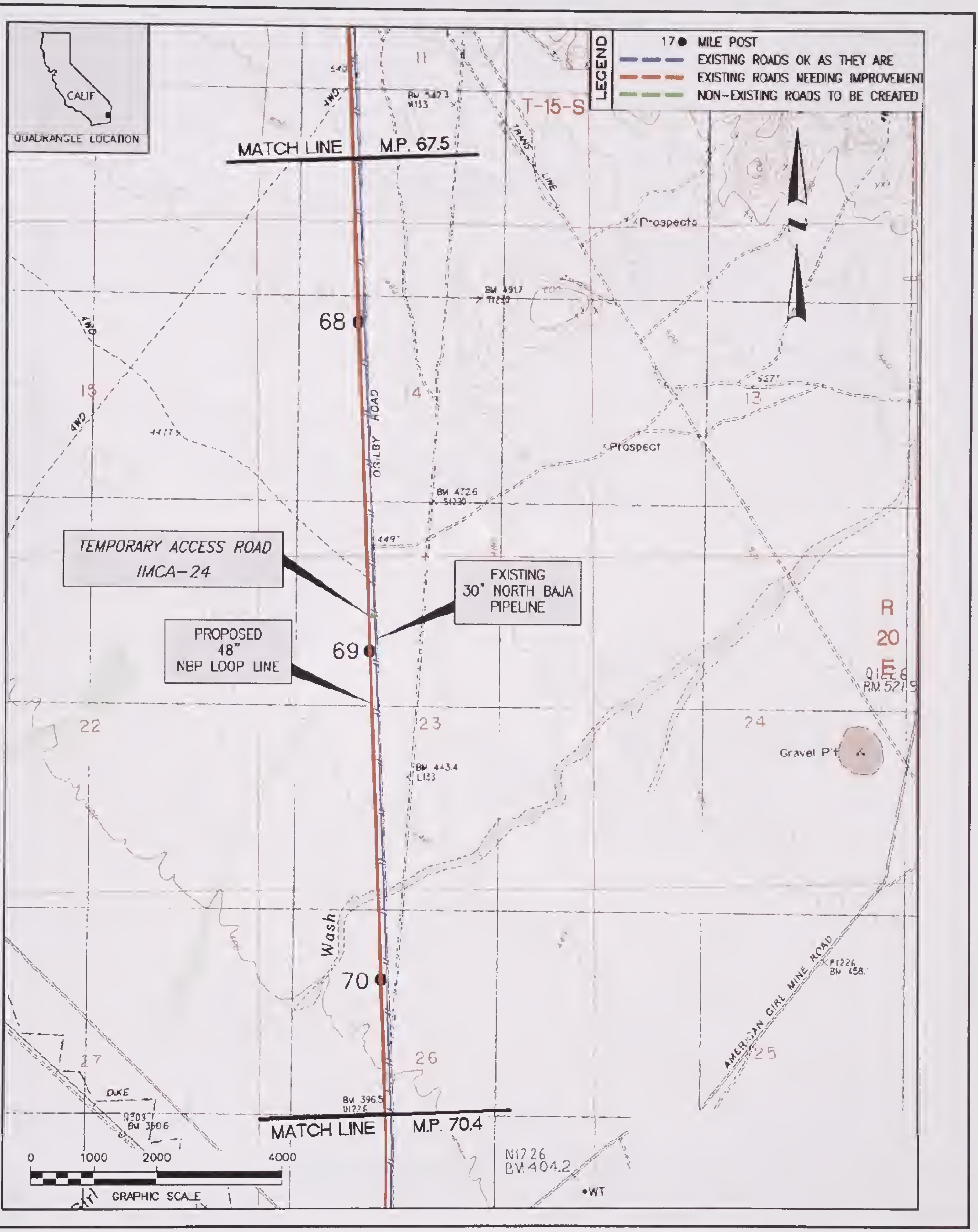

Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

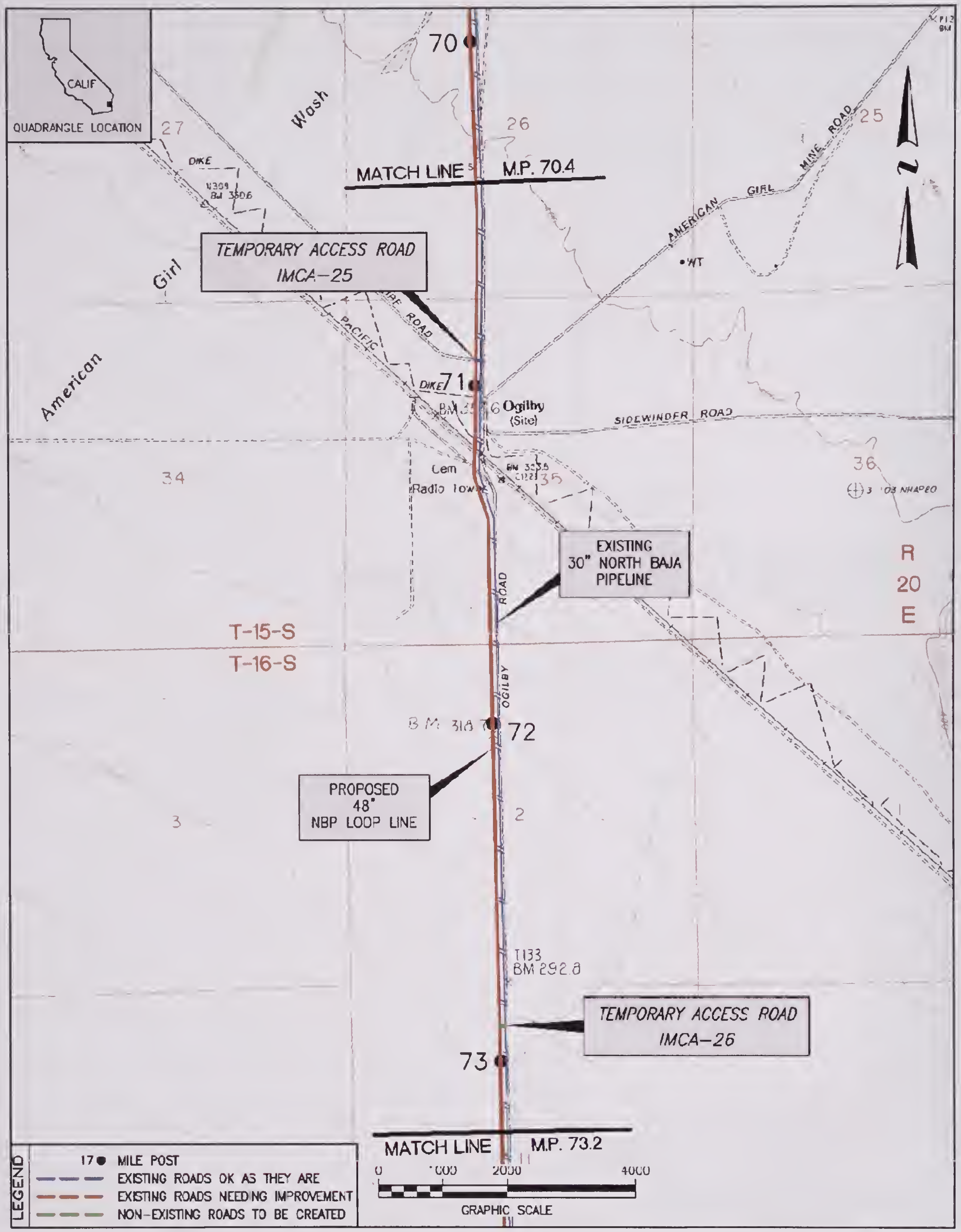

Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

Sheet 26 of 29

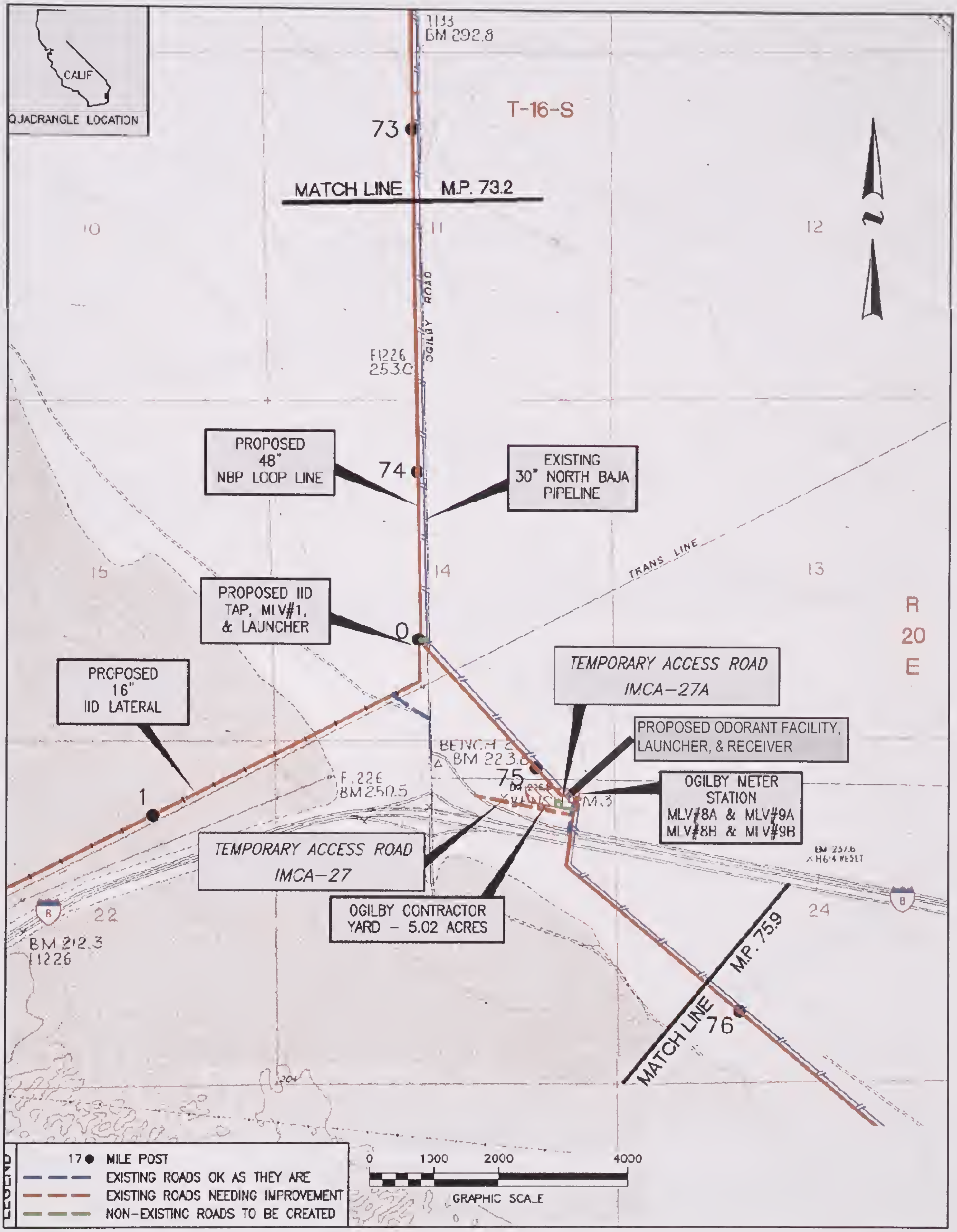
CALIF
QUADRANGLE LOCATION
1133
BM 292.8
T-16-S
73
MATCH LINE M.P. 73.2
10
11
12
N
OGILBY ROAD
F1226
253.0
PROPOSED 48" NBP LOOP LINE
74
EXISTING 30" NORTH BAJA PIPELINE
15
14
13
TRANS. LINE
R 20 E
PROPOSED IID TAP, MLV#1, & LAUNCHER
0
PROPOSED 16" IID LATERAL
TEMPORARY ACCESS ROAD IMCA-27A
PROPOSED ODORANT FACILITY, LAUNCHER, & RECEIVER
BENCH
BM 223.8
F.226
BM 250.5
75
1
OGILBY METER STATION MLV#8A & MLV#9A MLV#8B & MLV#9B
TEMPORARY ACCESS ROAD IMCA-27
OGILBY CONTRACTOR YARD – 5.02 ACRES
BM 237.6
H614 RESET
8
22
24
BM 212.3
1226
M.P. 75.9
MATCH LINE
76
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED
0
1000
2000
4000
GRAPHIC SCALE

Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

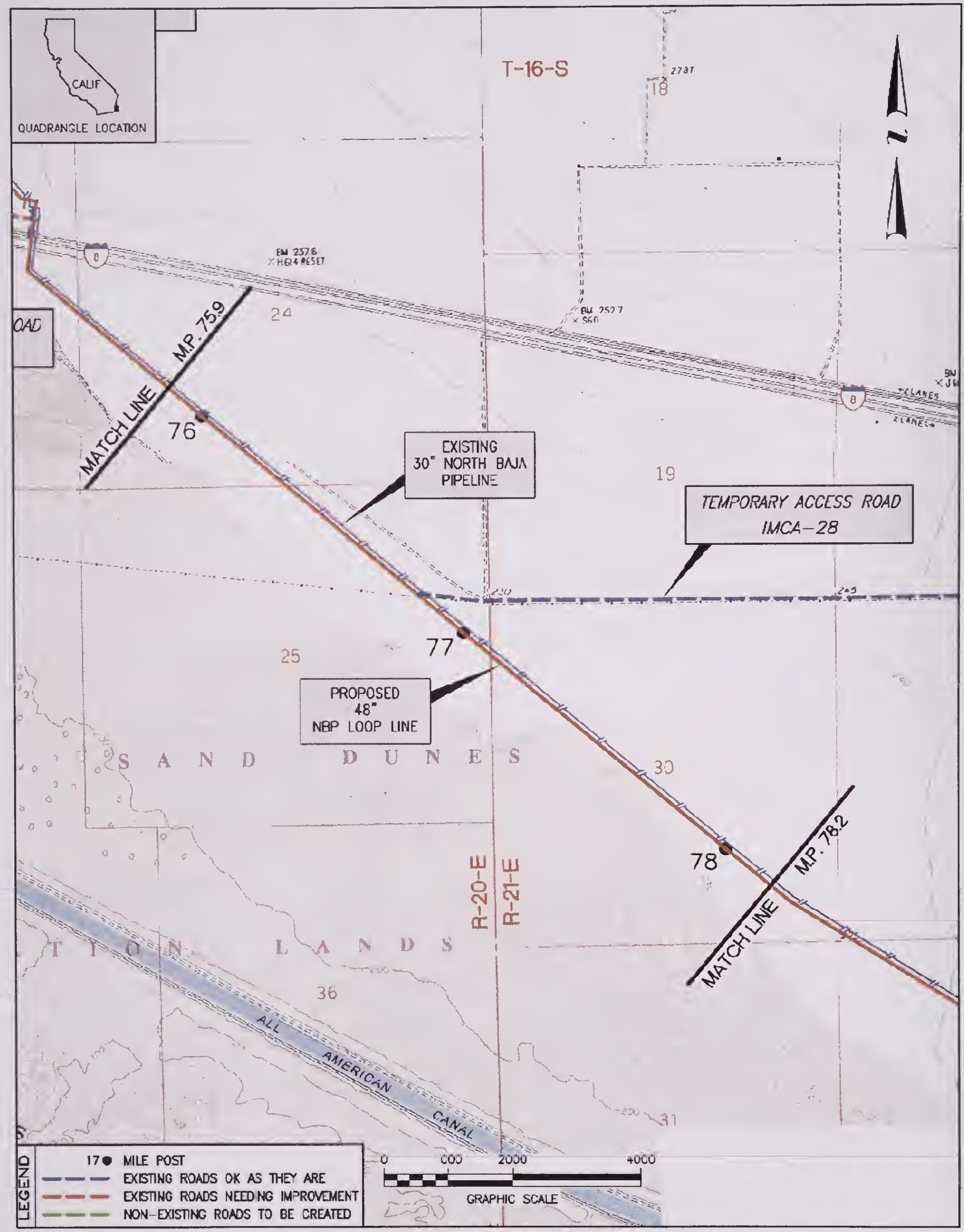

Figure B-1

North Baja Pipeline Expansion Project

B-Line

Facility Locations

Sheet 28 of 29

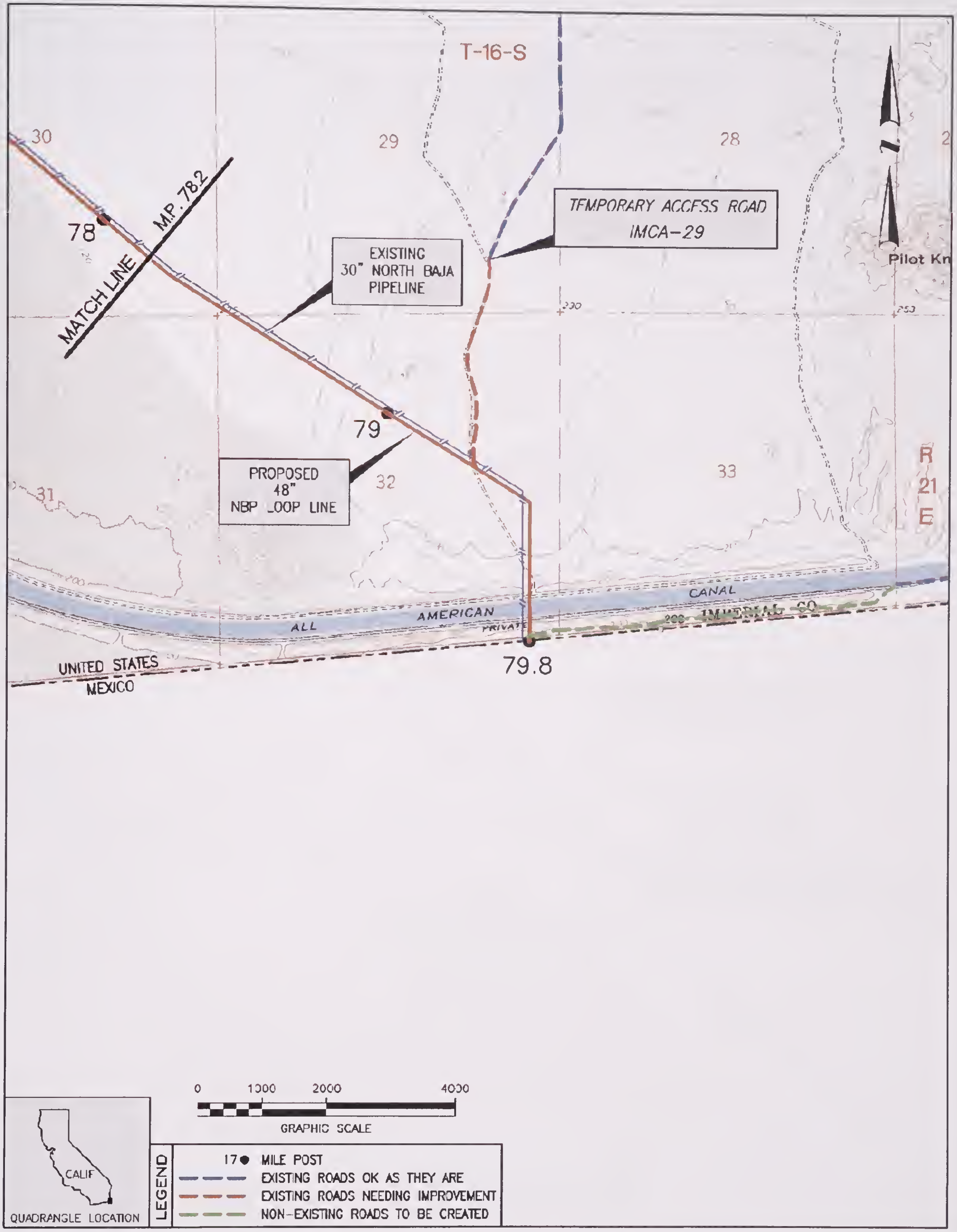

Figure B-1
North Baja Pipeline Expansion Project
B-Line
Facility Locations

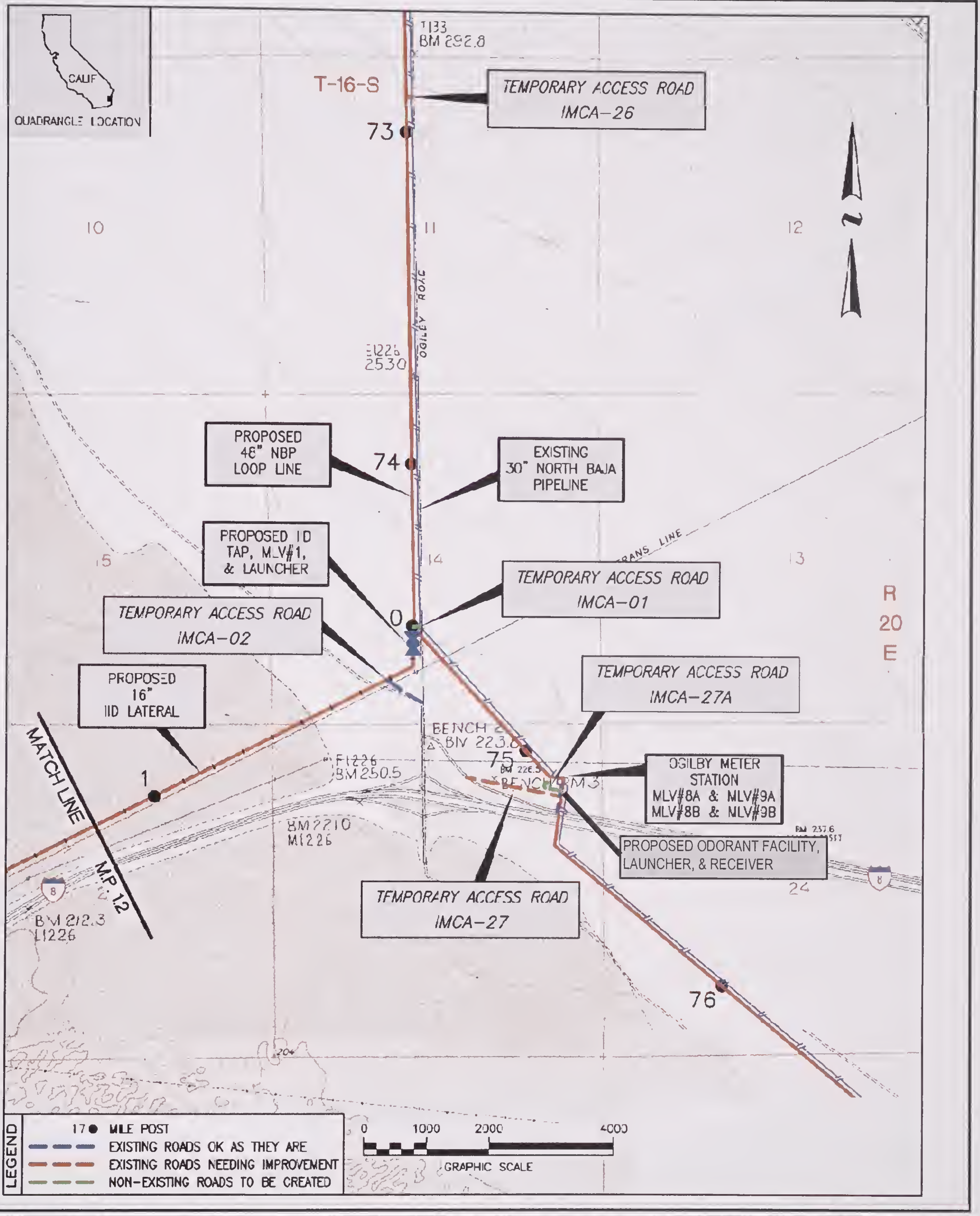
CALIF
QUADRANGLE LOCATION
T133
BM 292.8
T-16-S
TEMPORARY ACCESS ROAD IMCA-26
73
10
11
12
OGILBY ROAD
E1226
2530
PROPOSED 48" NBP LOOP LINE
74
EXISTING 30" NORTH BAJA PIPELINE
PROPOSED IID TAP, MLV#1, & LAUNCHER
TRANS LINE
15
14
13
TEMPORARY ACCESS ROAD IMCA-01
R 20 E
0
TEMPORARY ACCESS ROAD IMCA-02
PROPOSED 16" IID LATERAL
TEMPORARY ACCESS ROAD IMCA-27A
BENCH 2
BM 223.8
75
F1226
BM 250.5
BM 226.5
BENCH BM3
OGILBY METER STATION MLV#8A & MLV#9A MLV#8B & MLV#9B
MATCH LINE
1
M.P. 12
BM 221.0
M1226
BM 237.6
PROPOSED ODORANT FACILITY, LAUNCHER, & RECEIVER
8
24
8
BM 212.3
L1226
TEMPORARY ACCESS ROAD IMCA-27
76
204
LEGEND
17● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED
0
1000
2000
4000
GRAPHIC SCALE

Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

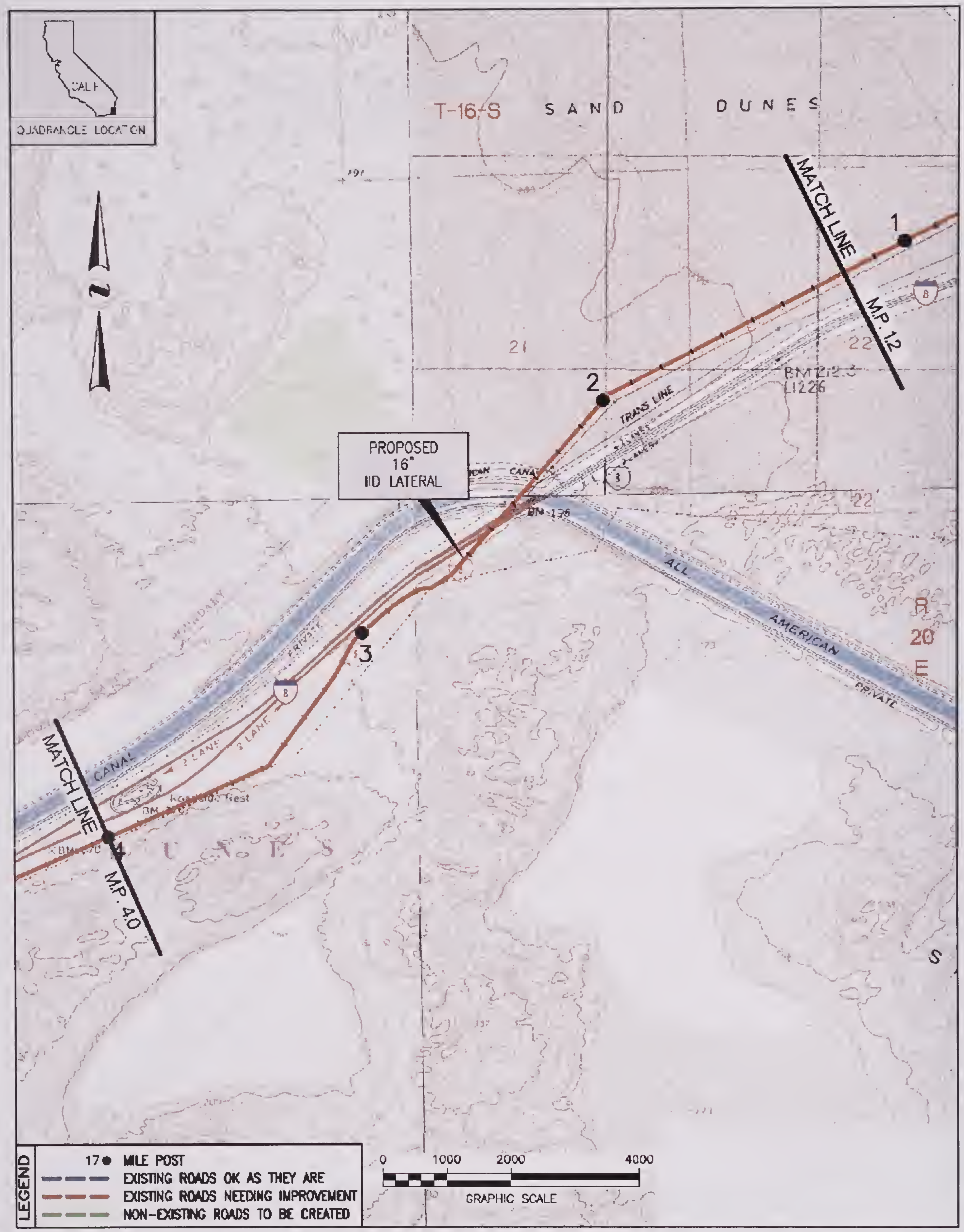

Figure B-2
North Baja Pipeline Expansion Project
IID Lateral
Facility Locations

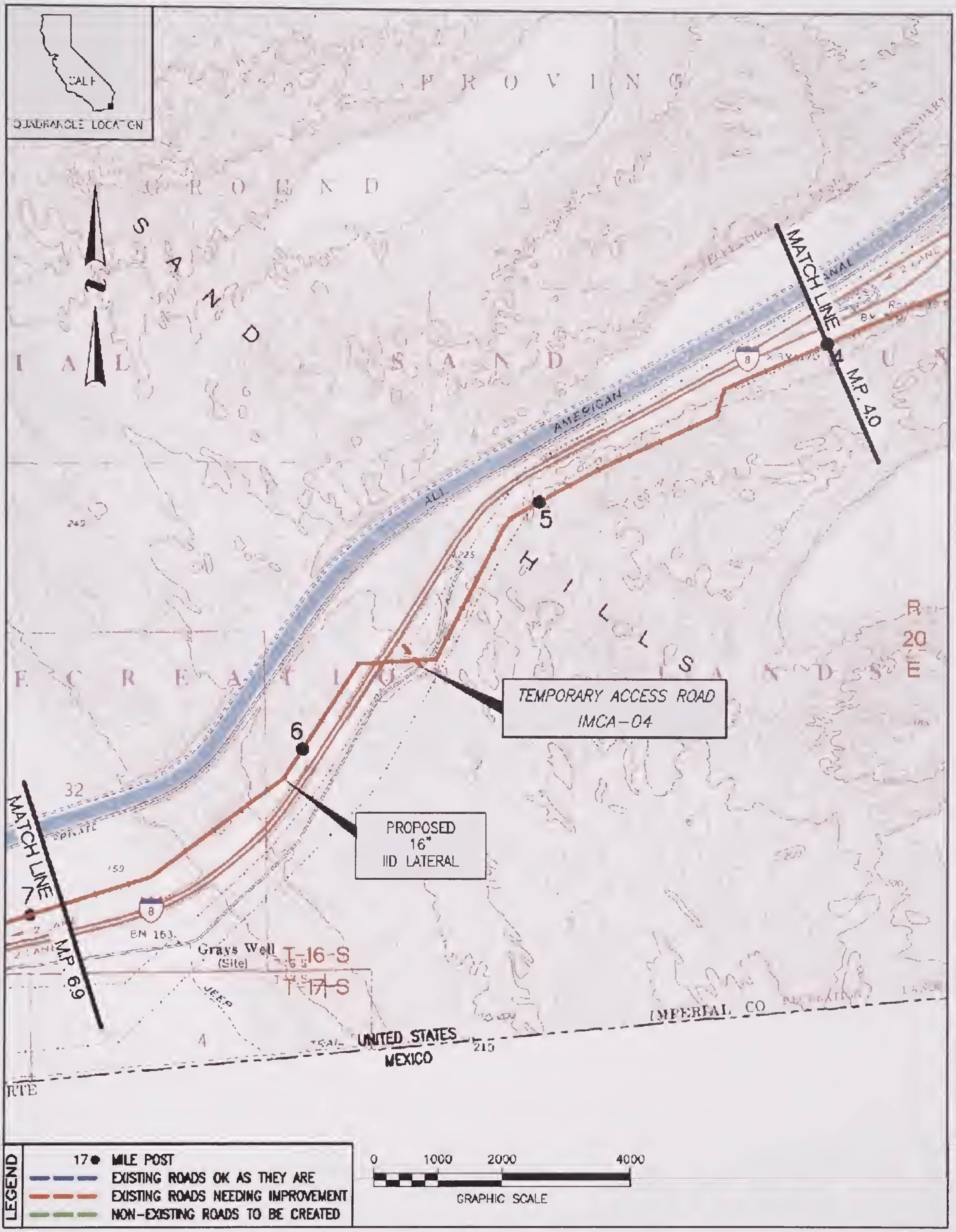

Figure B-2
North Baja Pipeline Expansion Project
IID Lateral
Facility Locations

Sheet 3 of 19

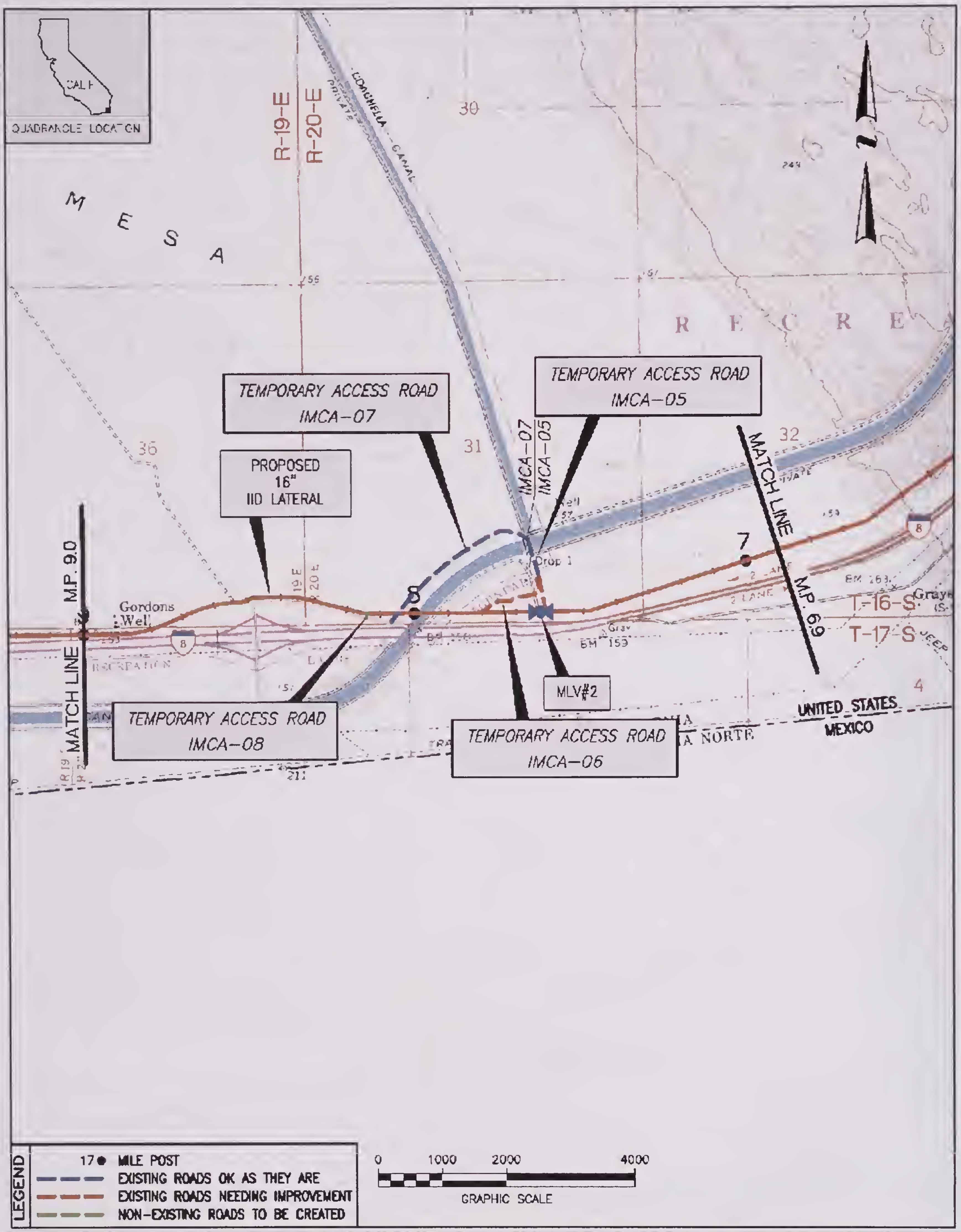

Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

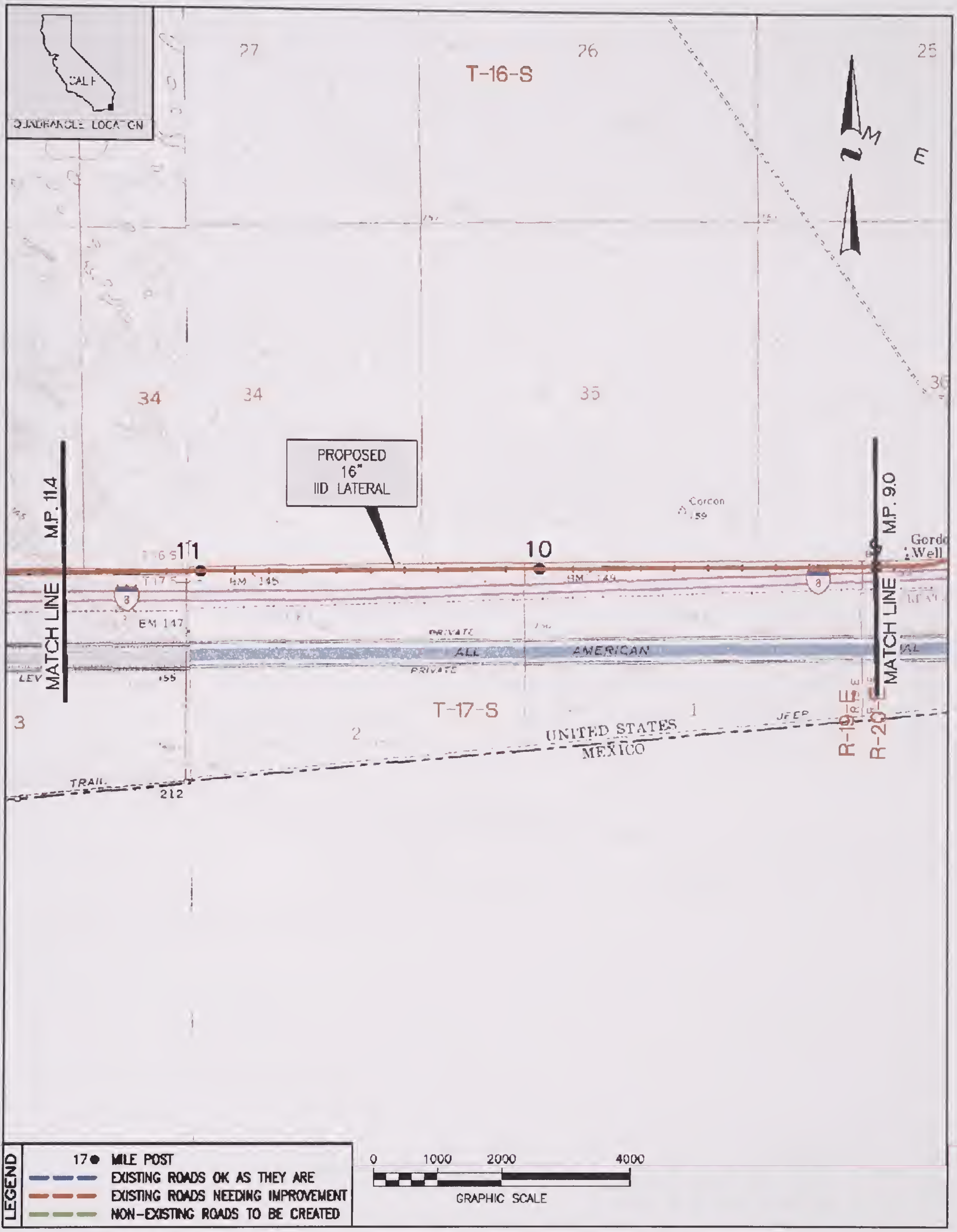

Figure B-2
North Baja Pipeline Expansion Project
IID Lateral
Facility Locations

Sheet 5 of 19

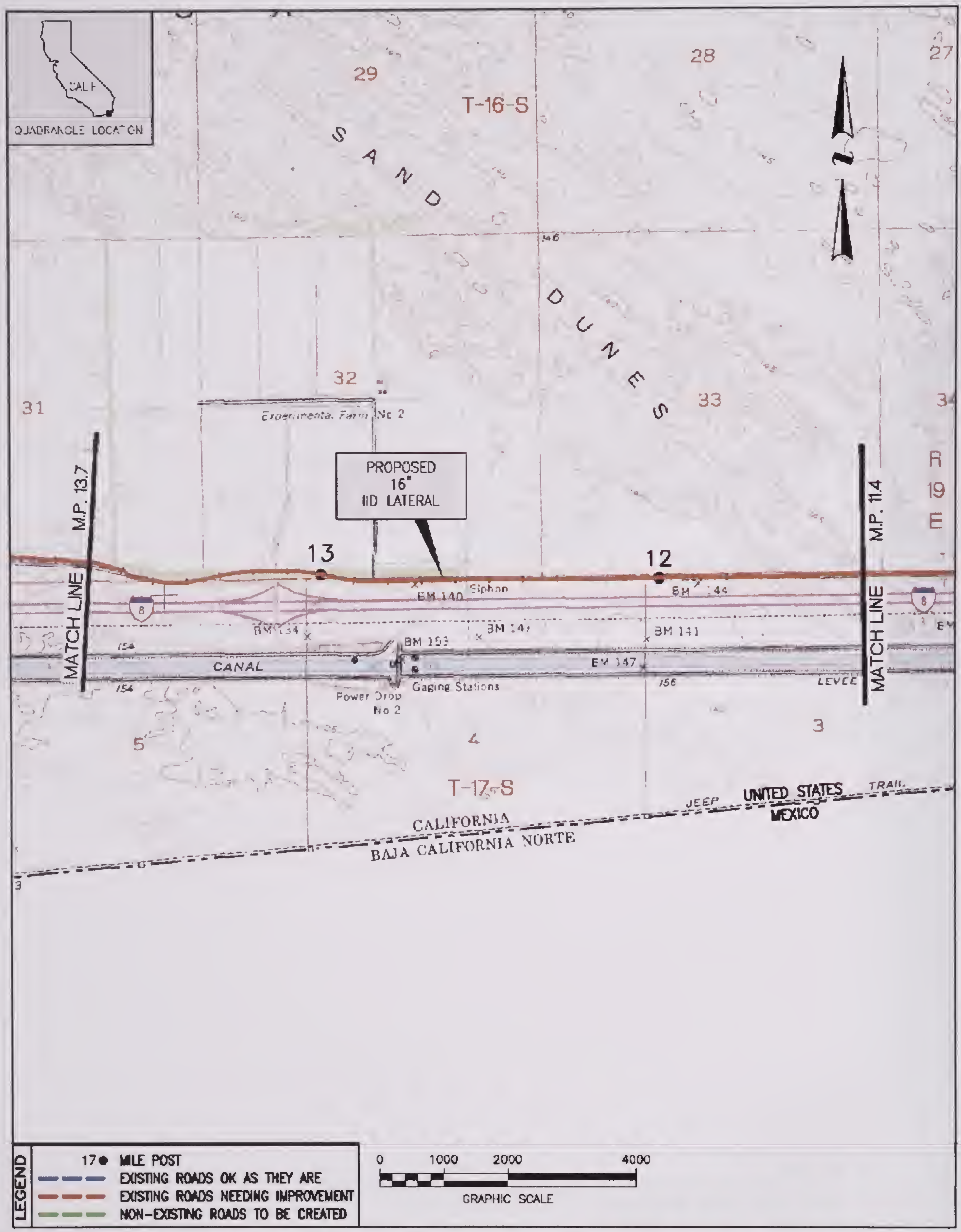

Figure B-2
North Baja Pipeline Expansion Project
IID Lateral
Facility Locations

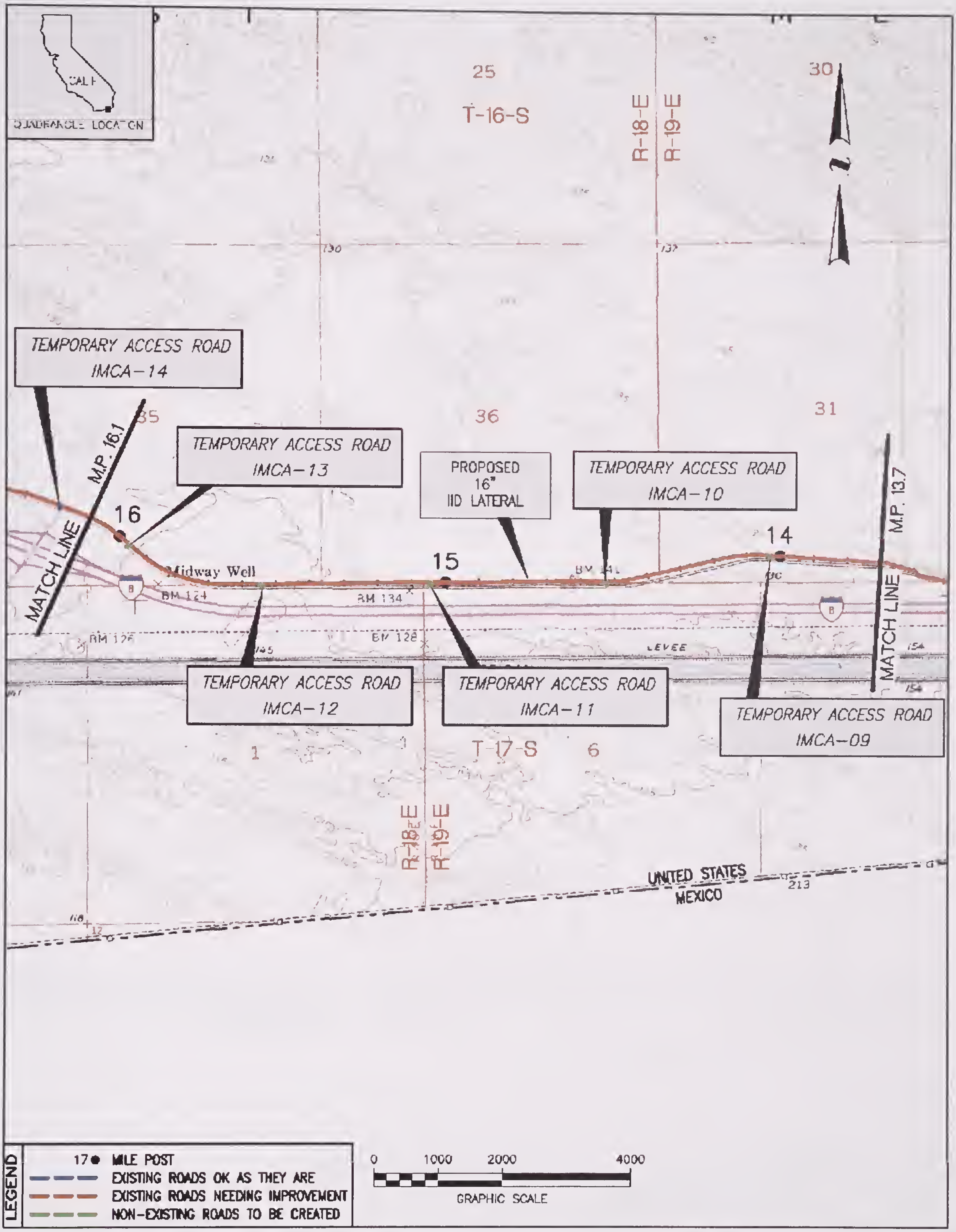
QUADRANGLE LOCATION
CALIF
25
T-16-S
R-18-E
R-19-E
30
35
36
31
TEMPORARY ACCESS ROAD IMCA-14
TEMPORARY ACCESS ROAD IMCA-13
PROPOSED 16" IID LATERAL
TEMPORARY ACCESS ROAD IMCA-10
M.P. 16.1
MATCH LINE
16
15
14
M.P. 13.7
MATCH LINE
Midway Well
BM 124
BM 134
BM 141
BM 126
BM 128
LEVEE
TEMPORARY ACCESS ROAD IMCA-12
TEMPORARY ACCESS ROAD IMCA-11
TEMPORARY ACCESS ROAD IMCA-09
1
T-17-S
6
R-18-E
R-19-E
UNITED STATES
MEXICO
LEGEND
17 ● MILE POST
EXISTING ROADS OK AS THEY ARE
EXISTING ROADS NEEDING IMPROVEMENT
NON-EXISTING ROADS TO BE CREATED
0
1000
2000
4000
GRAPHIC SCALE

Figure B-2
North Baja Pipeline Expansion Project
IID Lateral
Facility Locations

Sheet 7 of 19

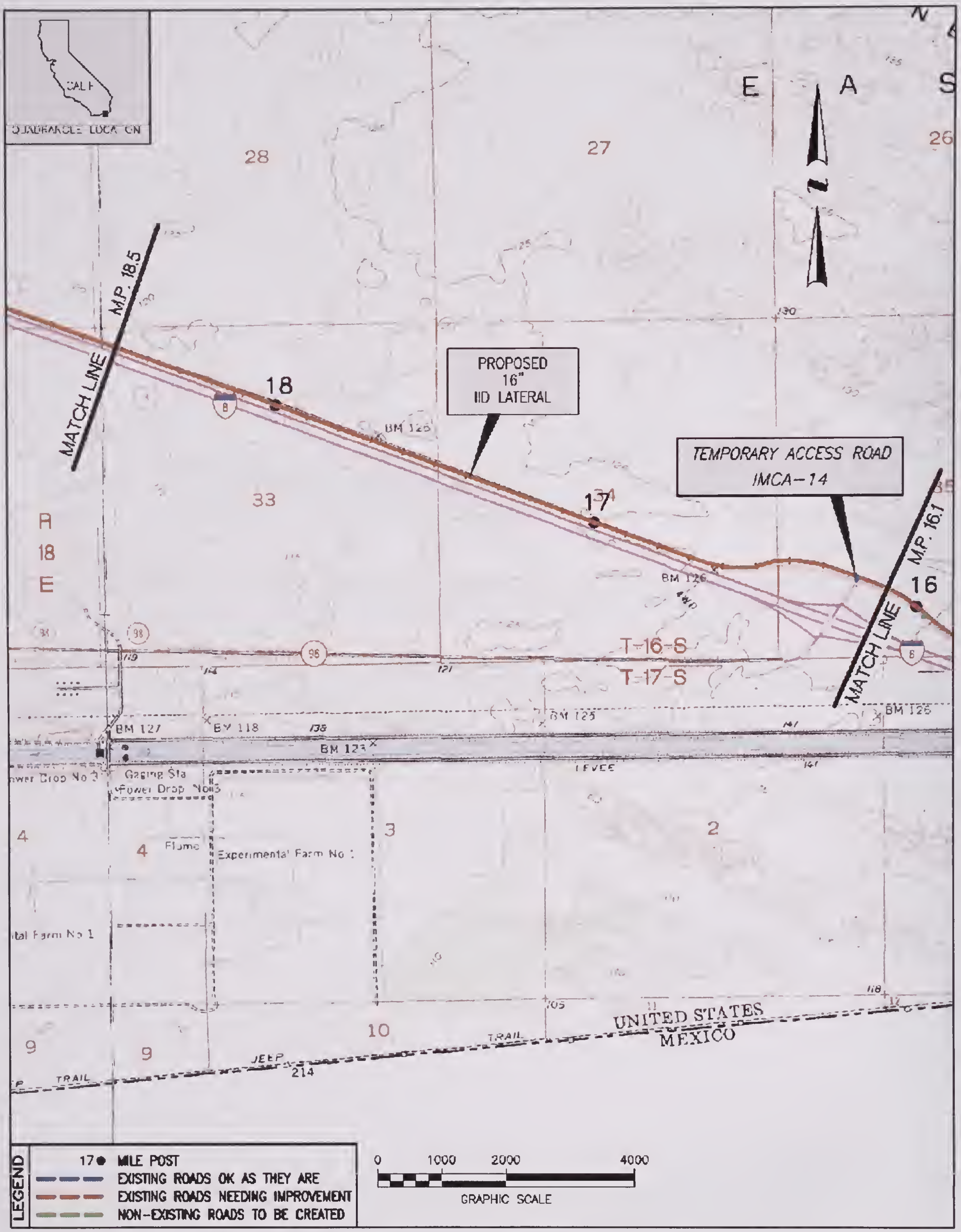

Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

Sheet 8 of 19

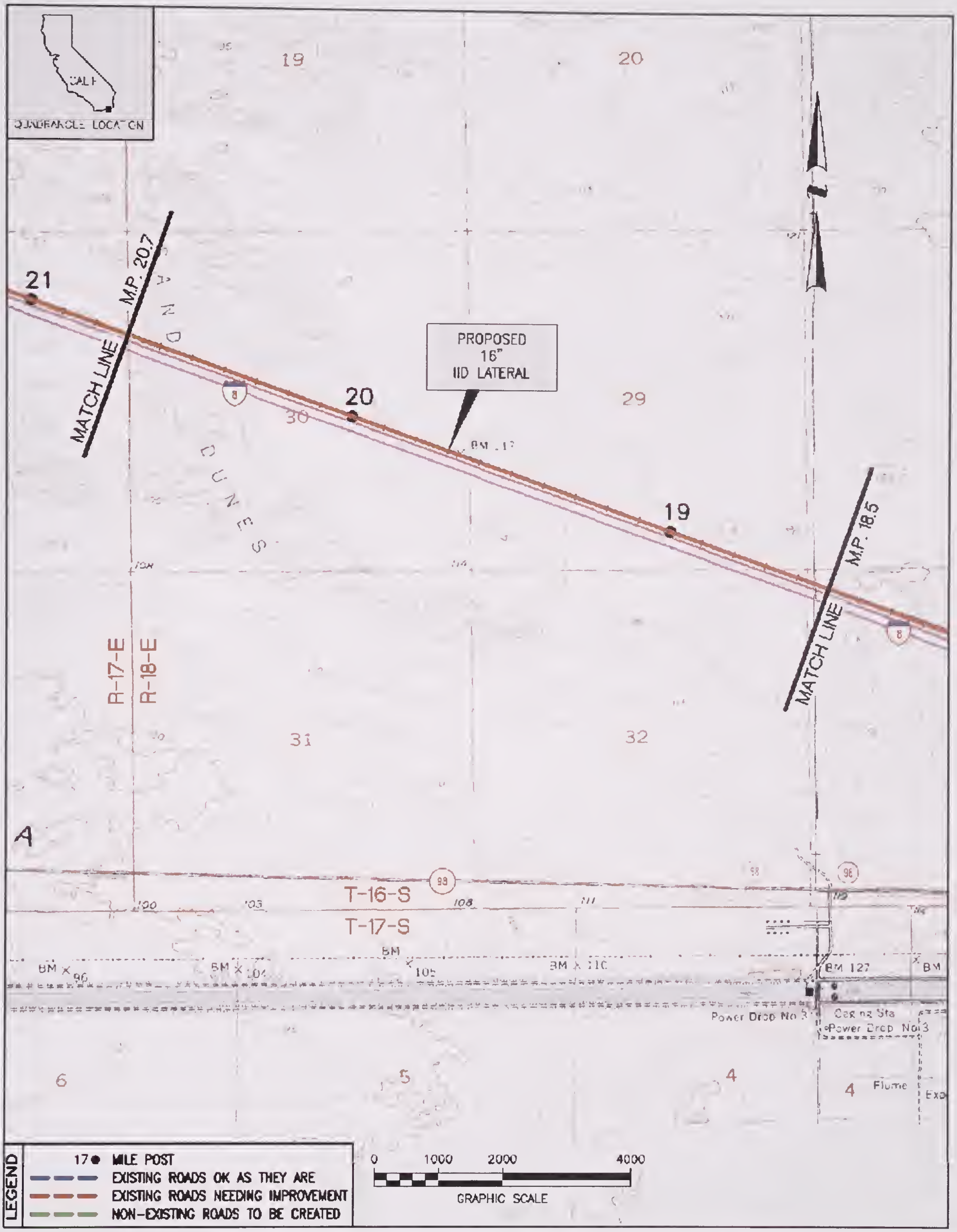

Figure B-2
North Baja Pipeline Expansion Project
IID Lateral
Facility Locations

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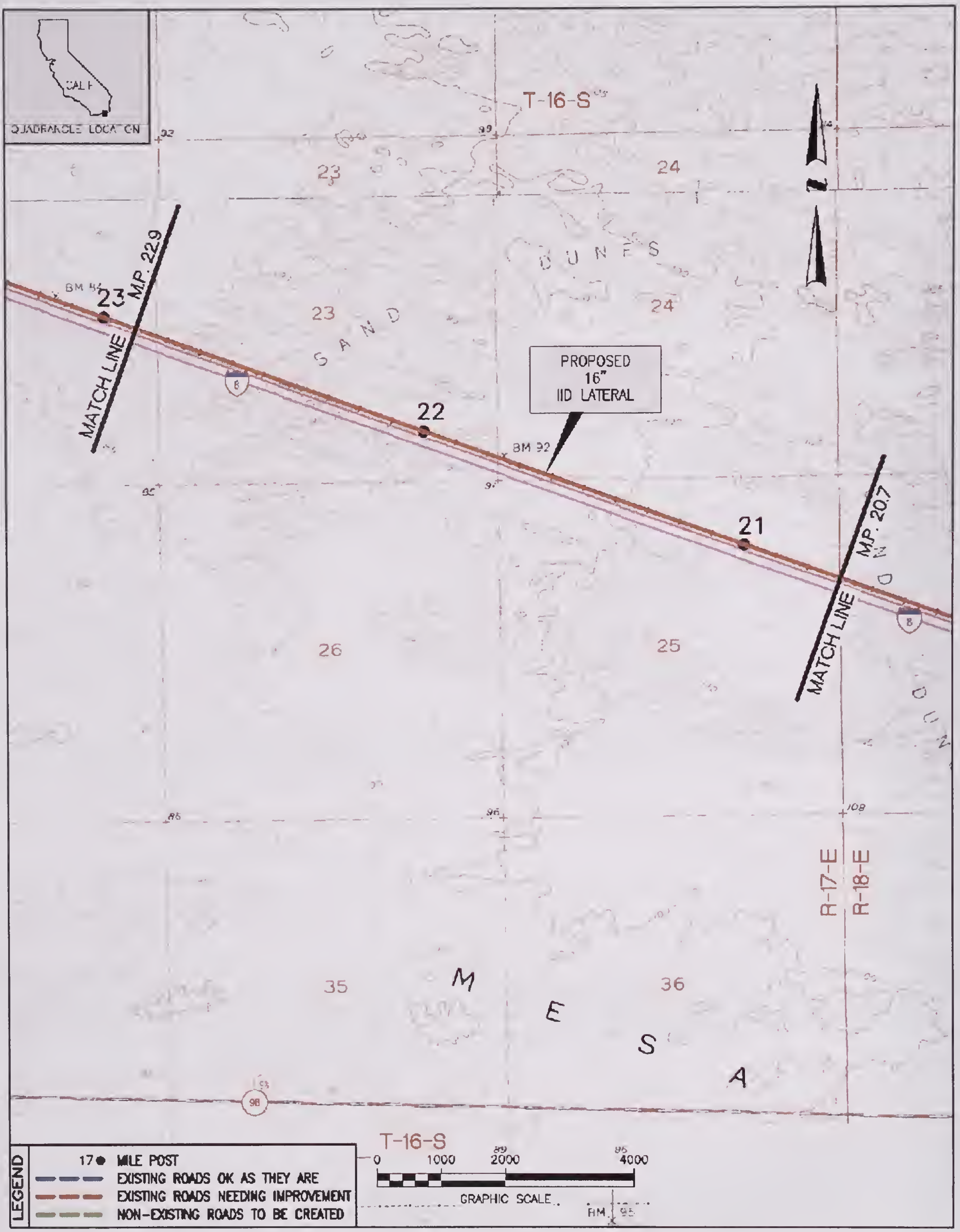


Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

Sheet 10 of 19

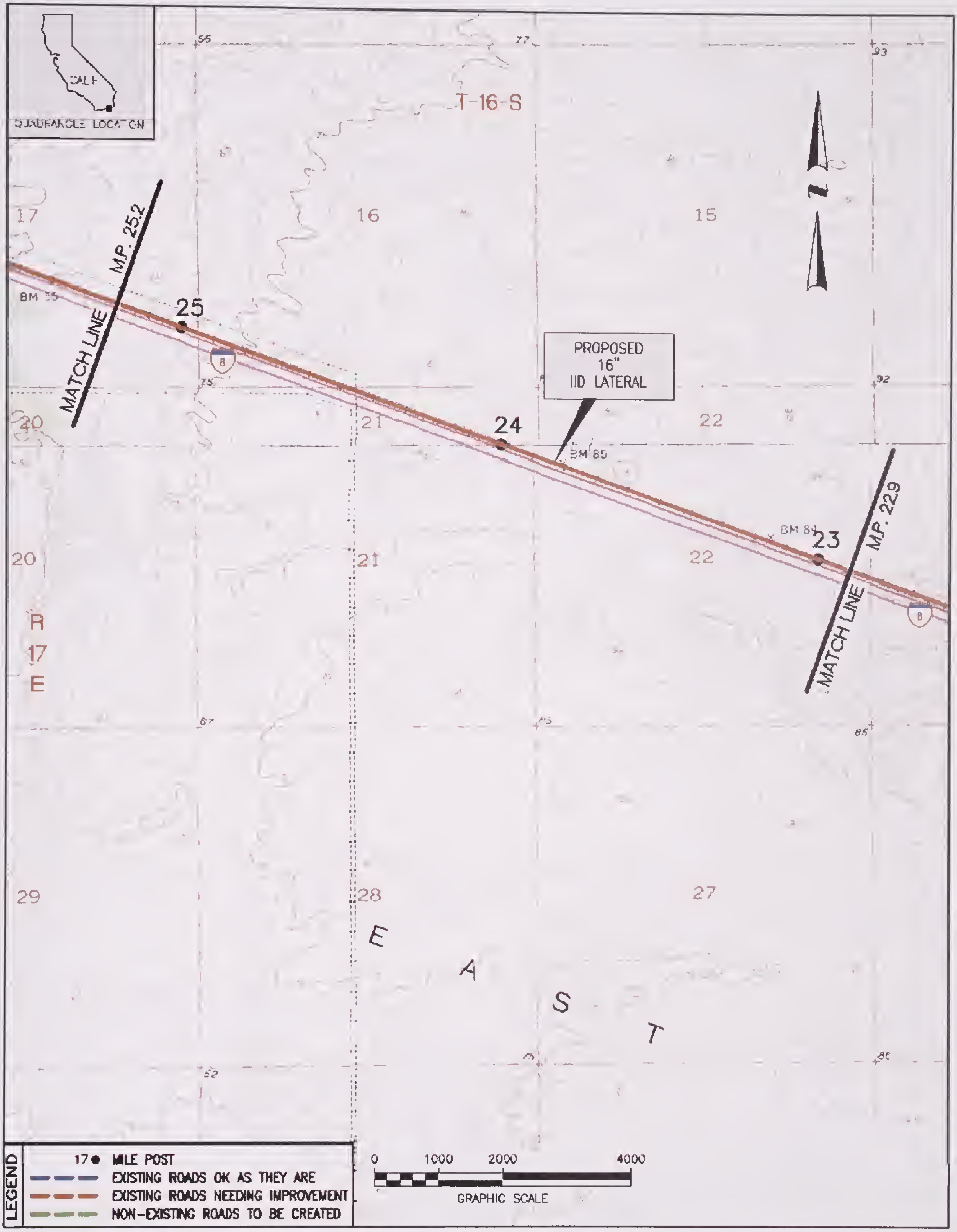


Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

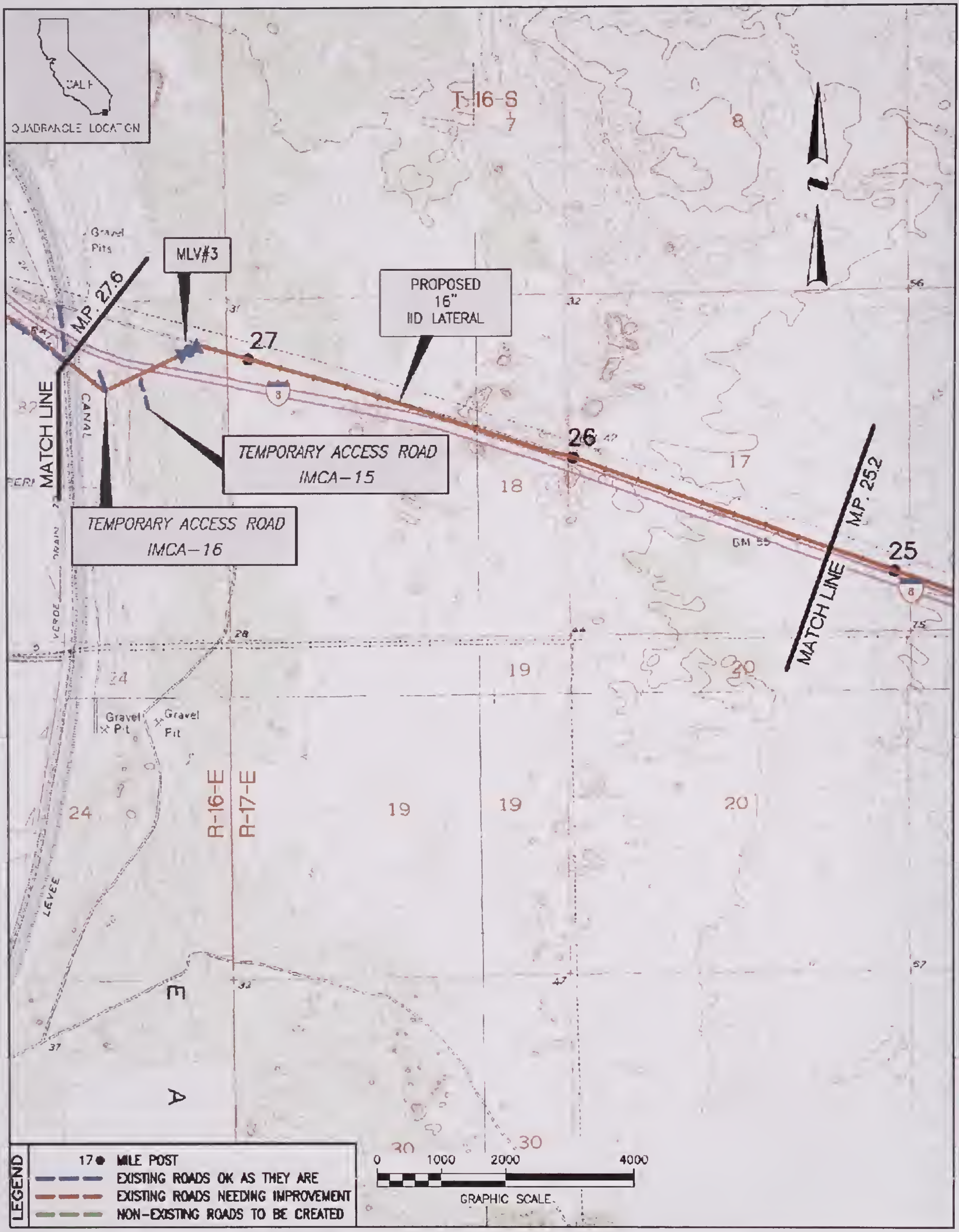


Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

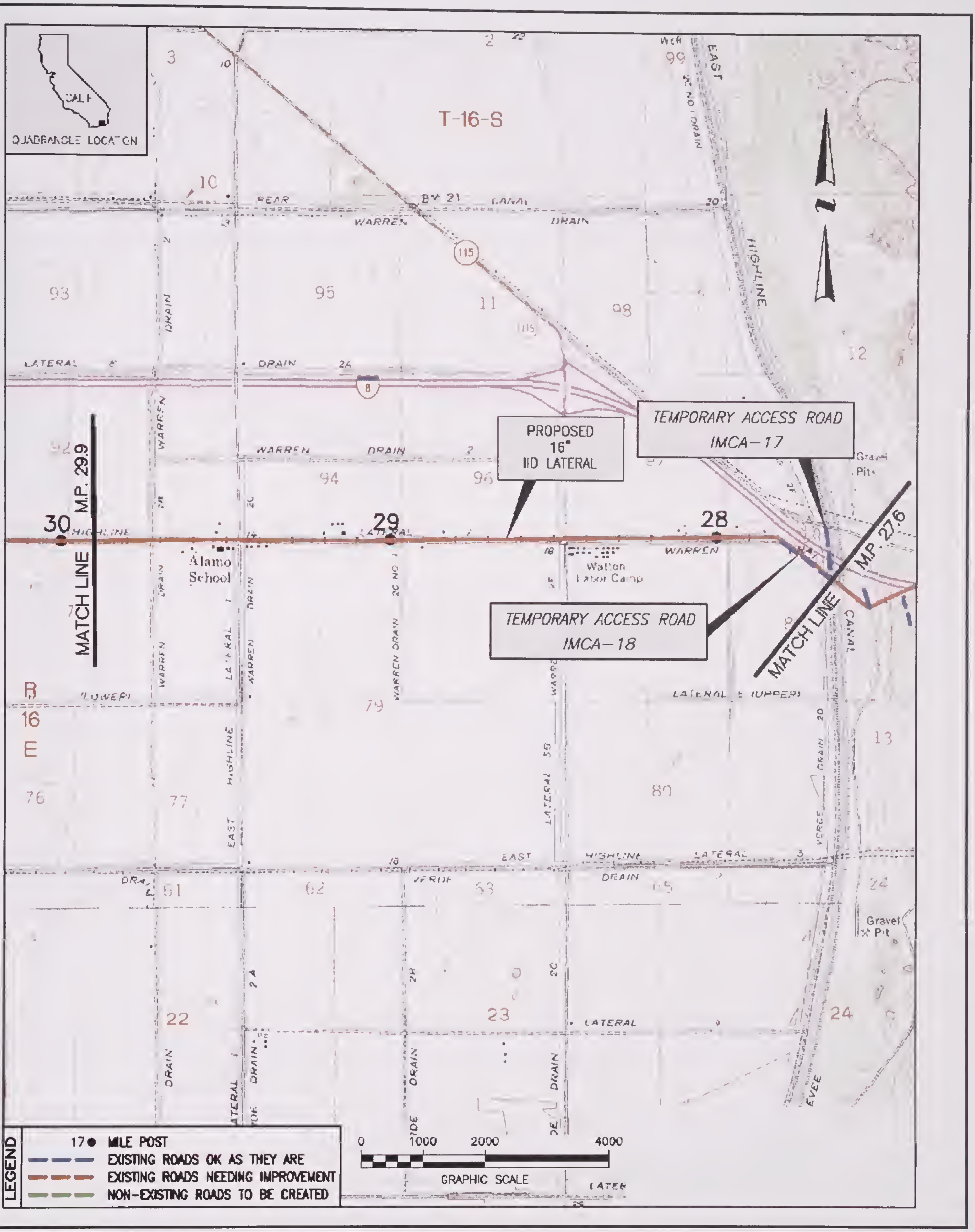


Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

Sheet 13 of 19

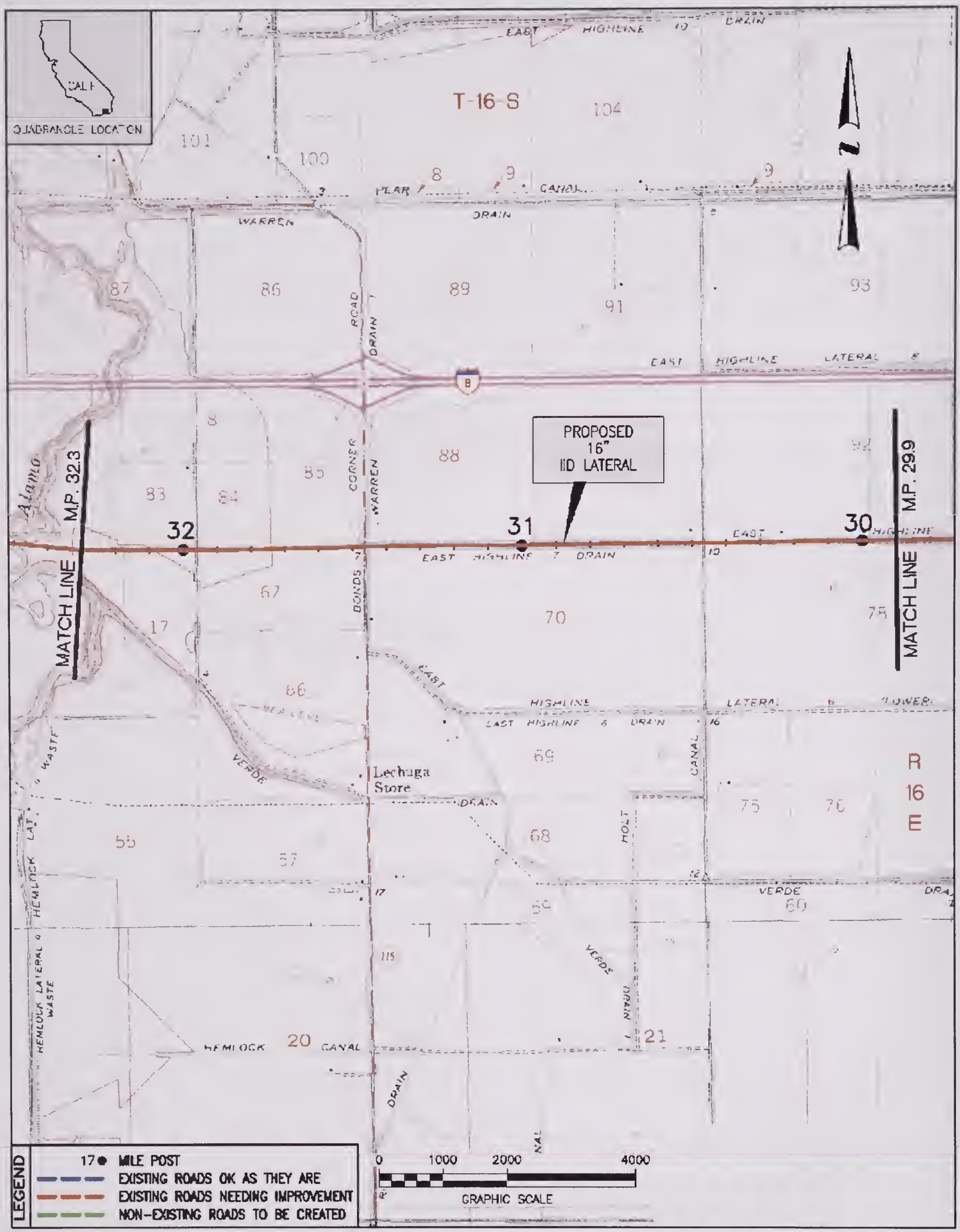


Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

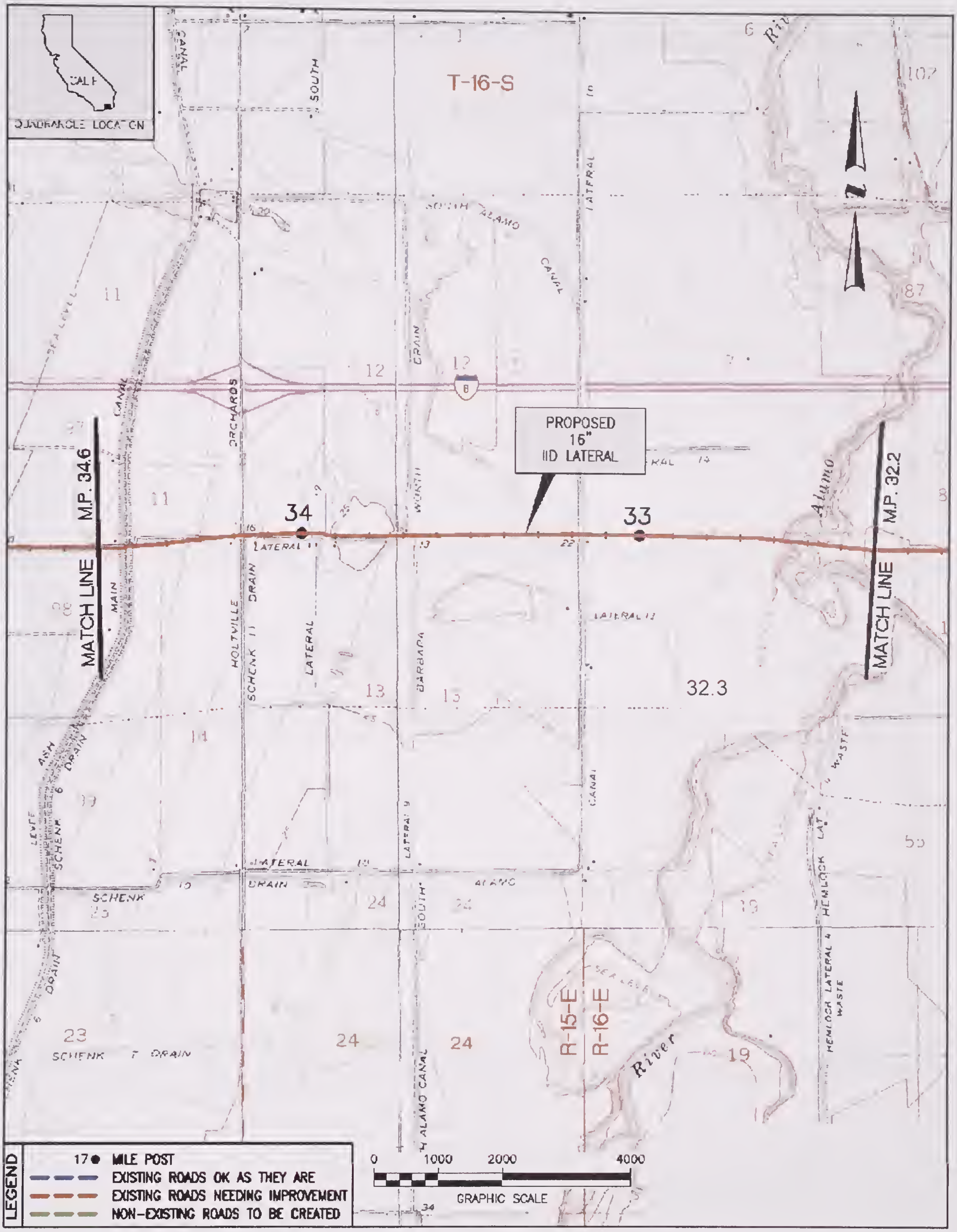


Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

Sheet 15 of 19

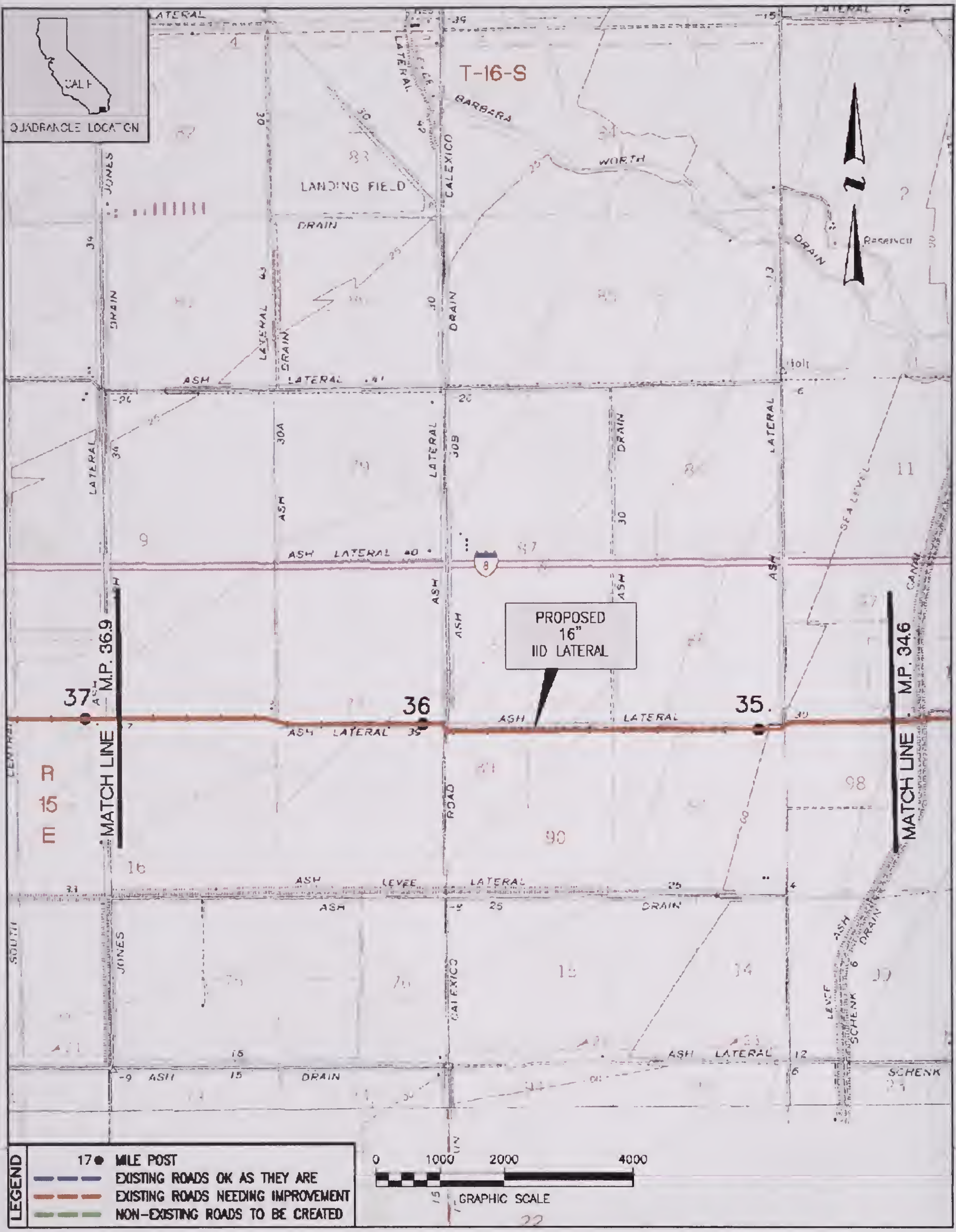


Figure B-2
North Baja Pipeline Expansion Project
IID Lateral
Facility Locations

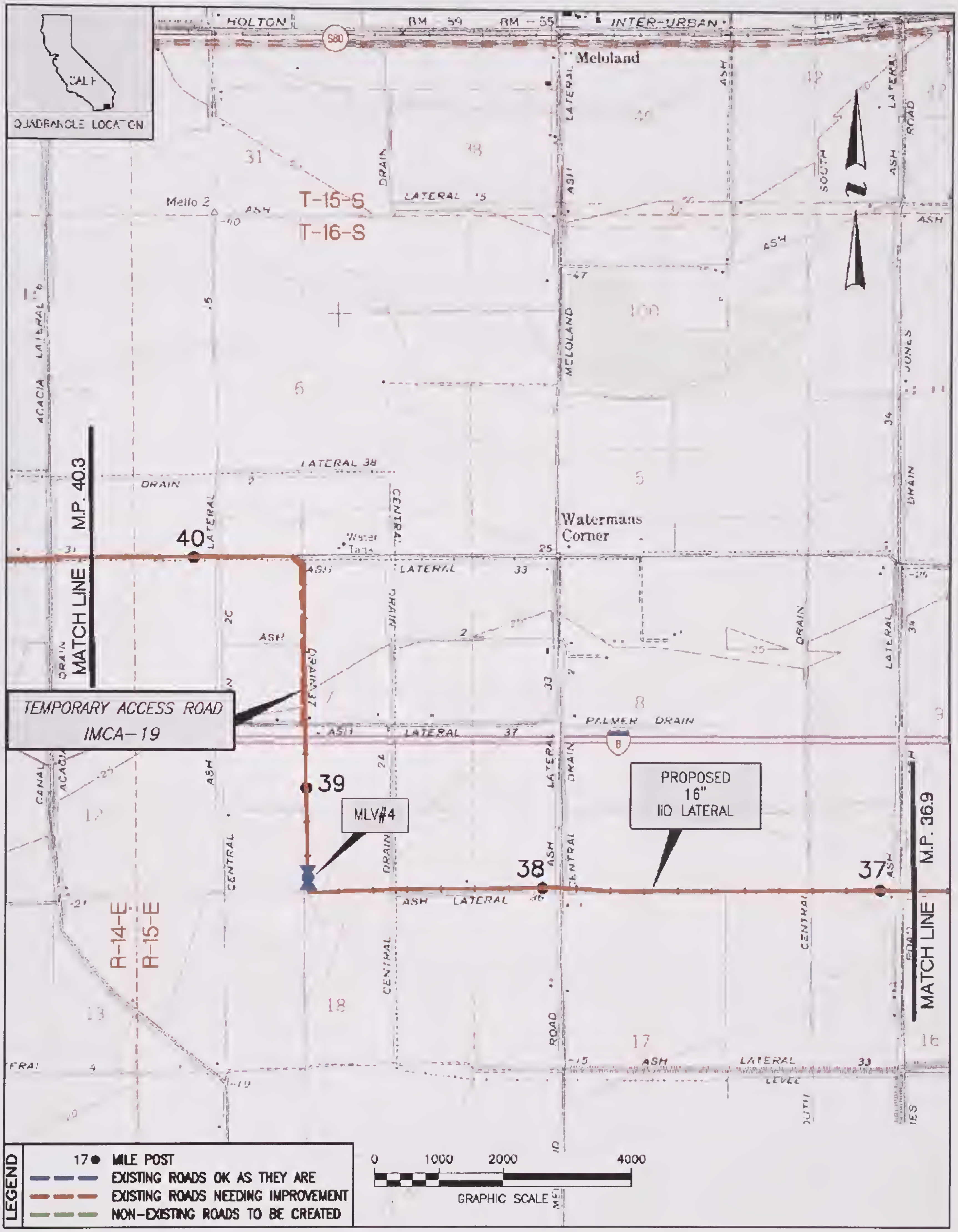


Figure B-2
North Baja Pipeline Expansion Project
IID Lateral
Facility Locations

Sheet 17 of 19

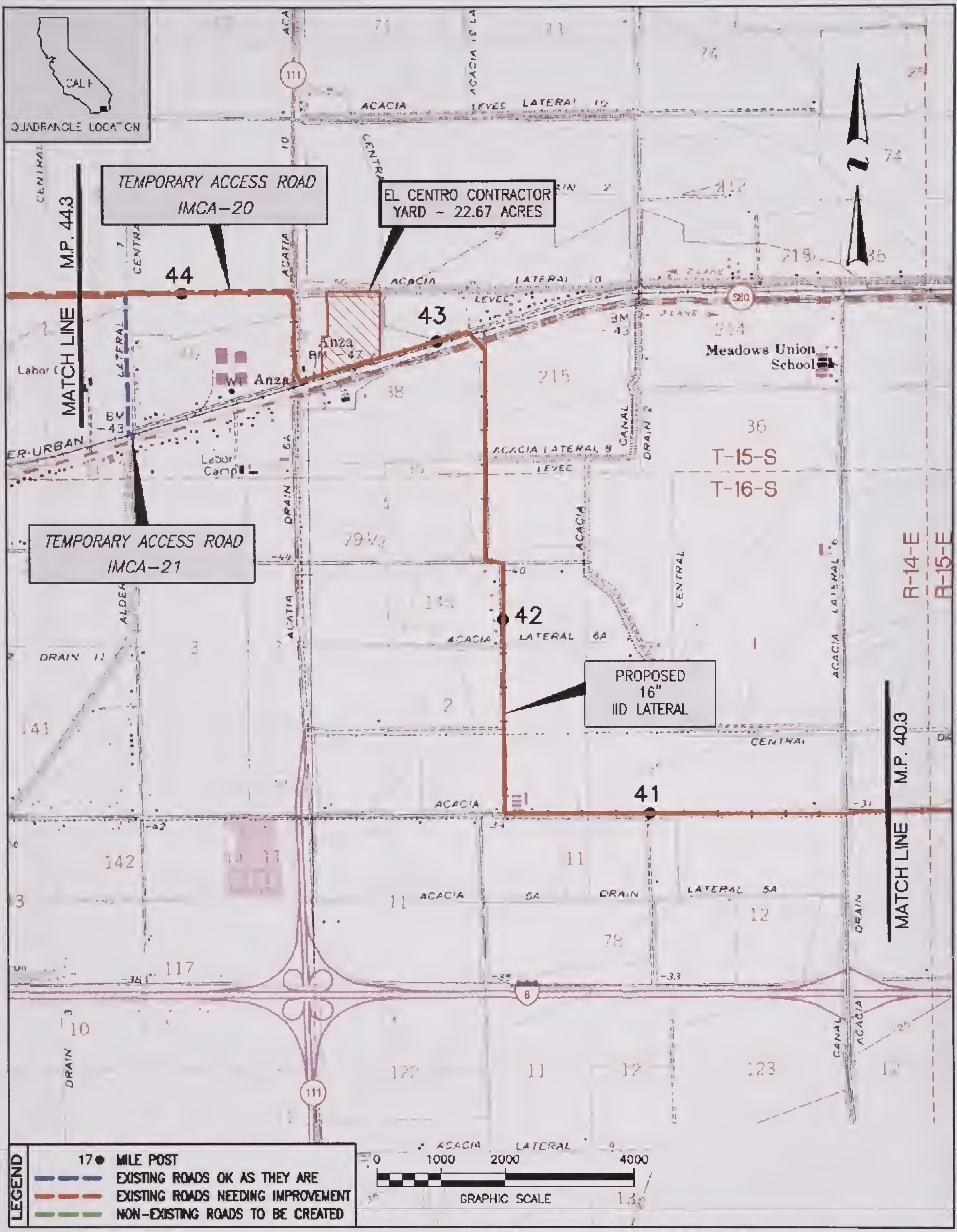


Figure B-2

North Baja Pipeline Expansion Project

IID Lateral

Facility Locations

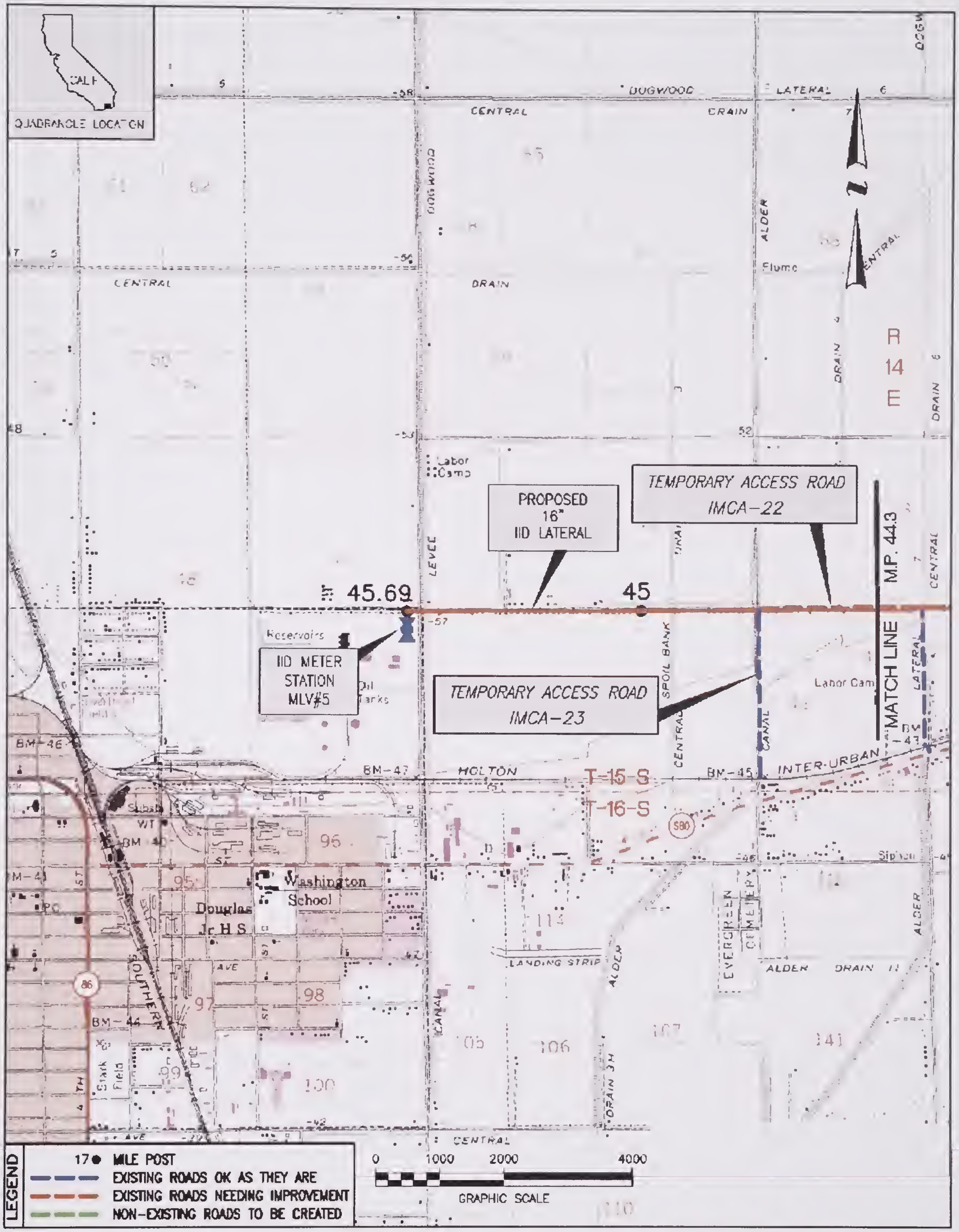


Figure B-2

North Baja Pipeline Expansion Project

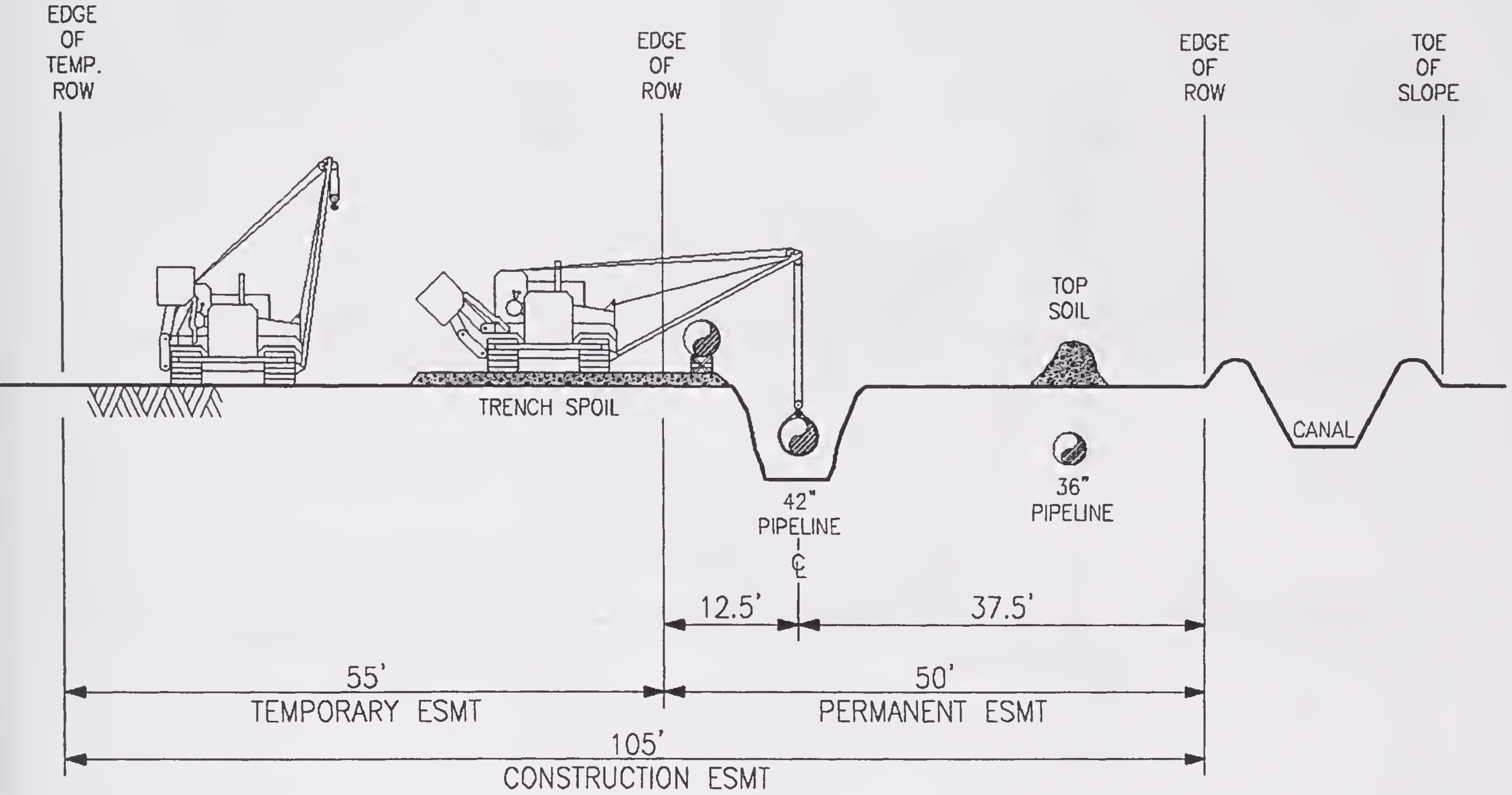
IID Lateral

Facility Locations

Sheet 19 of 19

APPENDIX C

TYPICAL RIGHT-OF-WAY CROSS SECTIONS



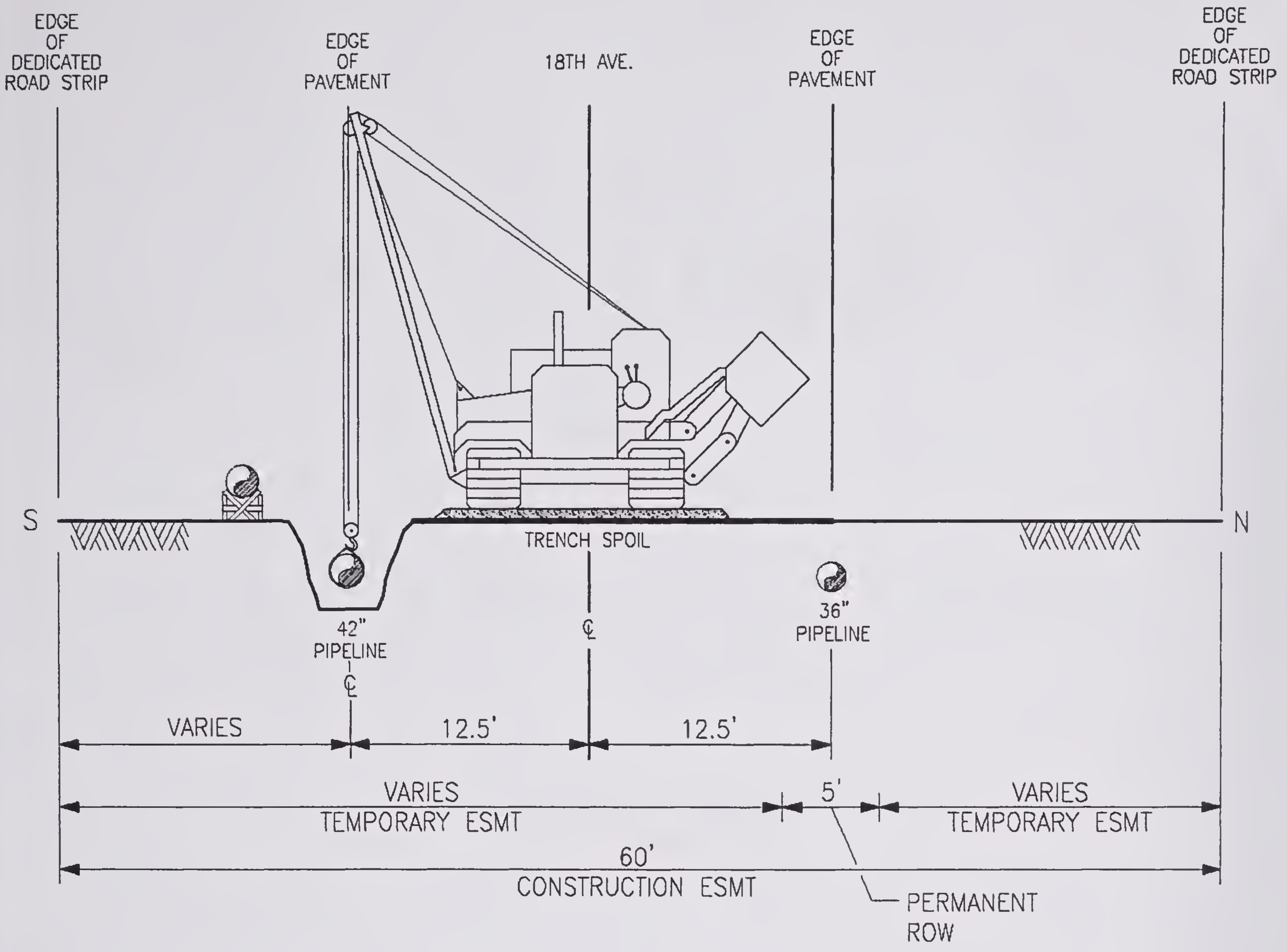
LOOKING SOUTH
M.P. 0.5 TO M.P. 2.3

NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-1
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
B-Line – Adjacent to Canal

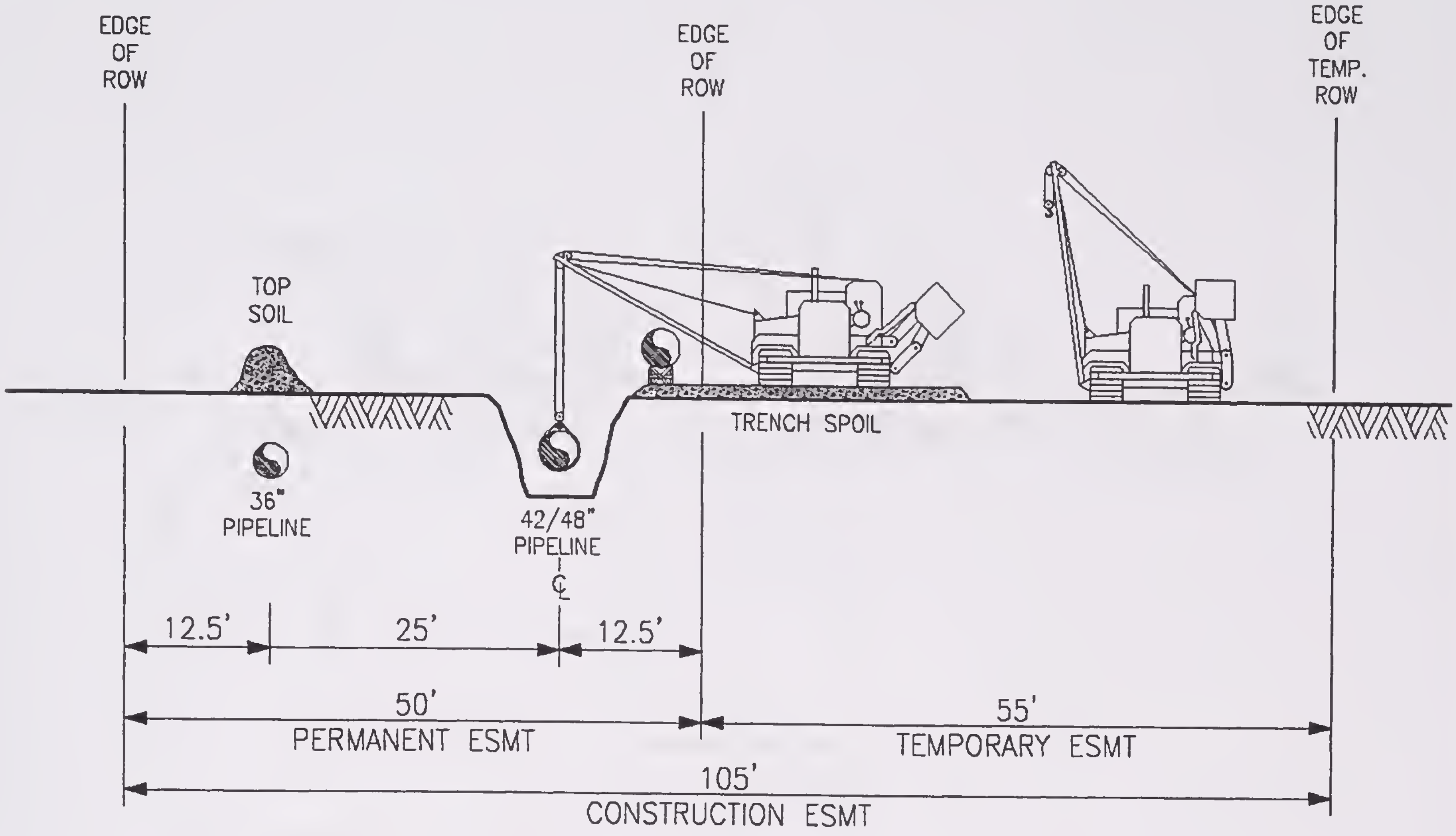


LOOKING WEST
M.P. 2.9 TO M.P. 10.5

NOTE:

NOMINAL 60' CONSTRUCTION RIGHT-OF-WAY TO BE CONFINED TO THE TRAVELED WAY AND SHOULDERS EXCEPT AT ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

Figure C-1
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
B-Line – 18th Avenue



42" - M.P. 2.3 TO M.P. 2.9 (LOOKING WEST)
42" - M.P. 10.5 TO M.P. 11.7 (LOOKING EAST)
48" - M.P. 11.7 TO M.P. 12.1 (LOOKING EAST)
48" - M.P. 22.3 TO M.P. 79.7 (LOOKING SOUTHERLY)

NOTE:

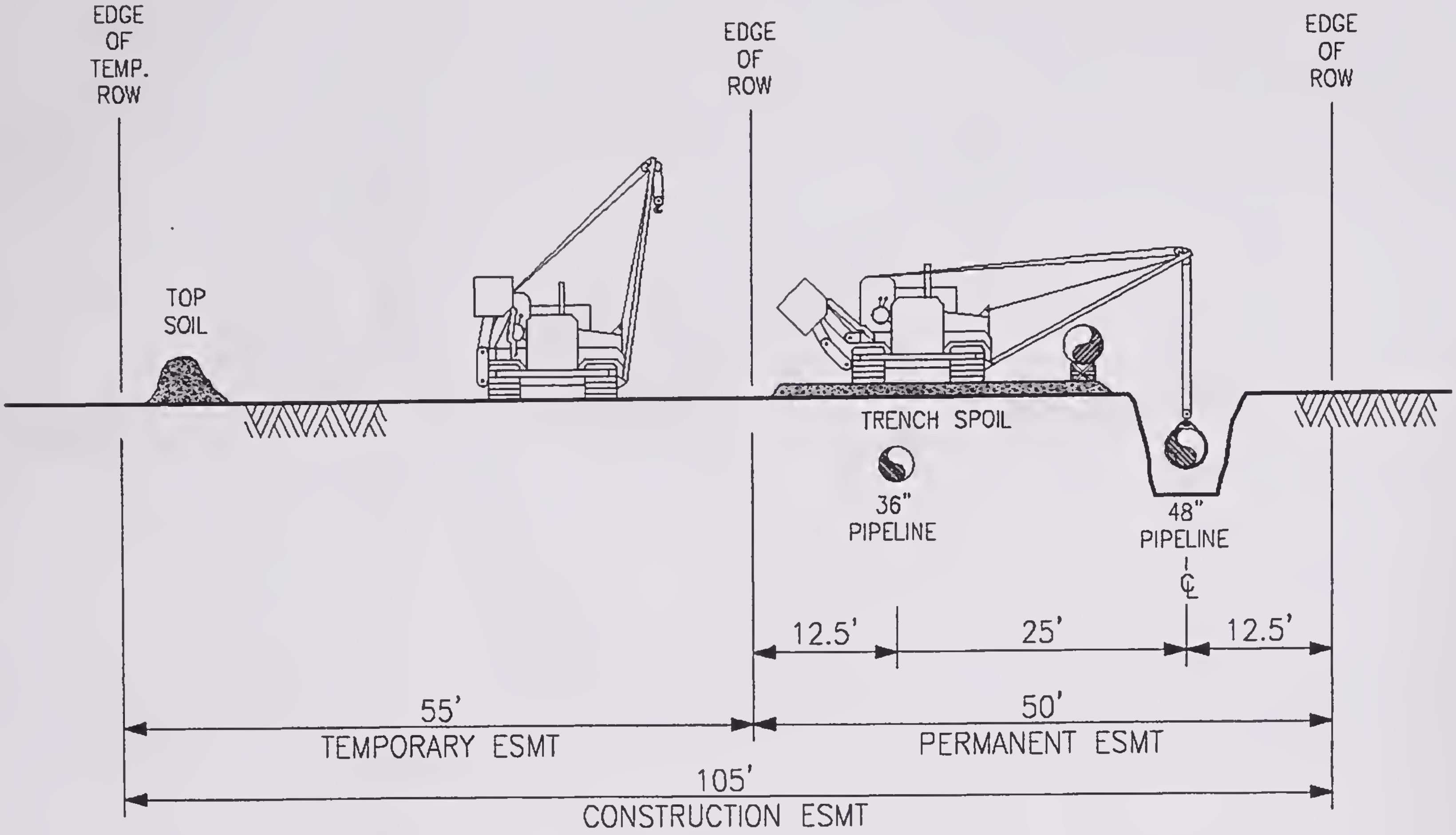
CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

THE CONSTRUCTION RIGHT-OF-WAY IS TO BE NARROWED AT DRY WASH WOODLAND CROSSINGS (SEE RESOURCE REPORT 3).

Figure C-1
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
B-Line – Cross Country Type I

Sheet 3 of 4



48" - M.P. 12.1 TO M.P. 22.3 (LOOKING SOUTHERLY)

NOTE:

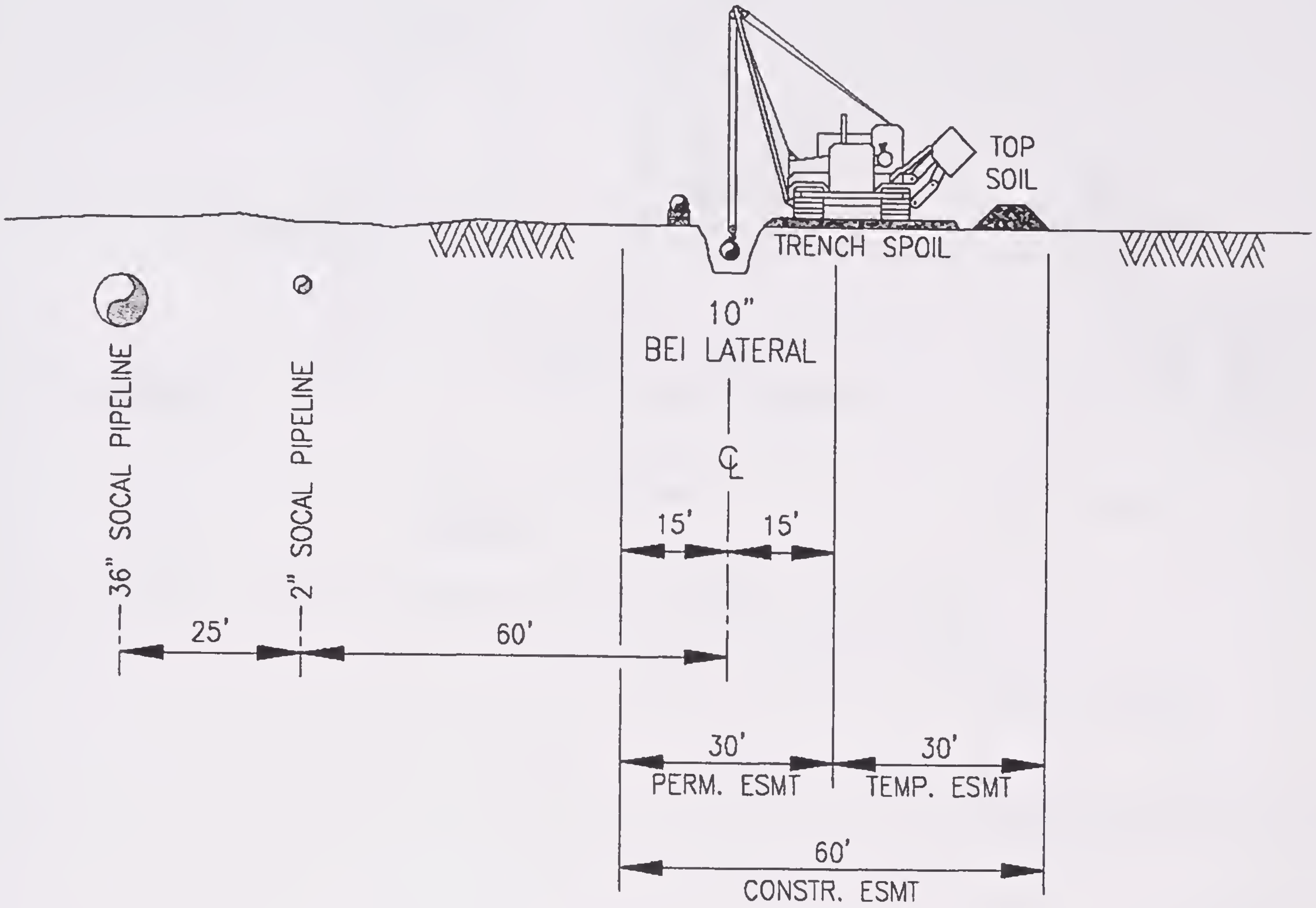
CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

THE CONSTRUCTION RIGHT-OF-WAY IS TO BE NARROWED AT DRY WASH WOODLAND CROSSINGS (SEE RESOURCE REPORT 3).

Figure C-1
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
B-Line – Cross Country Type II

Sheet 4 of 4



M.P. 0.0 TO M.P. 0.3
LOOKING NORTHERLY

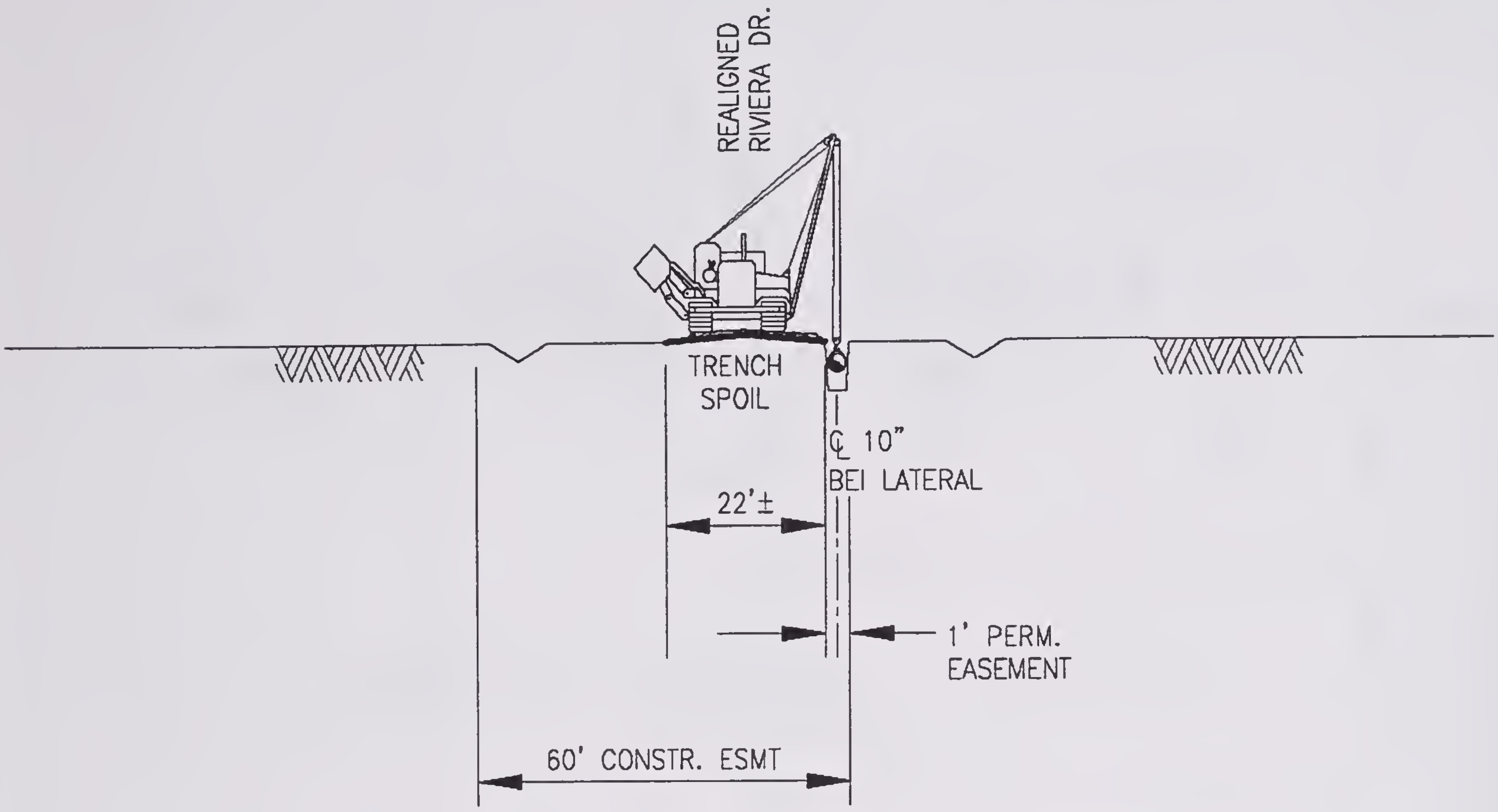
NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-2
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
BEI Lateral – MPs 0.0 to 0.3

Sheet 1 of 2



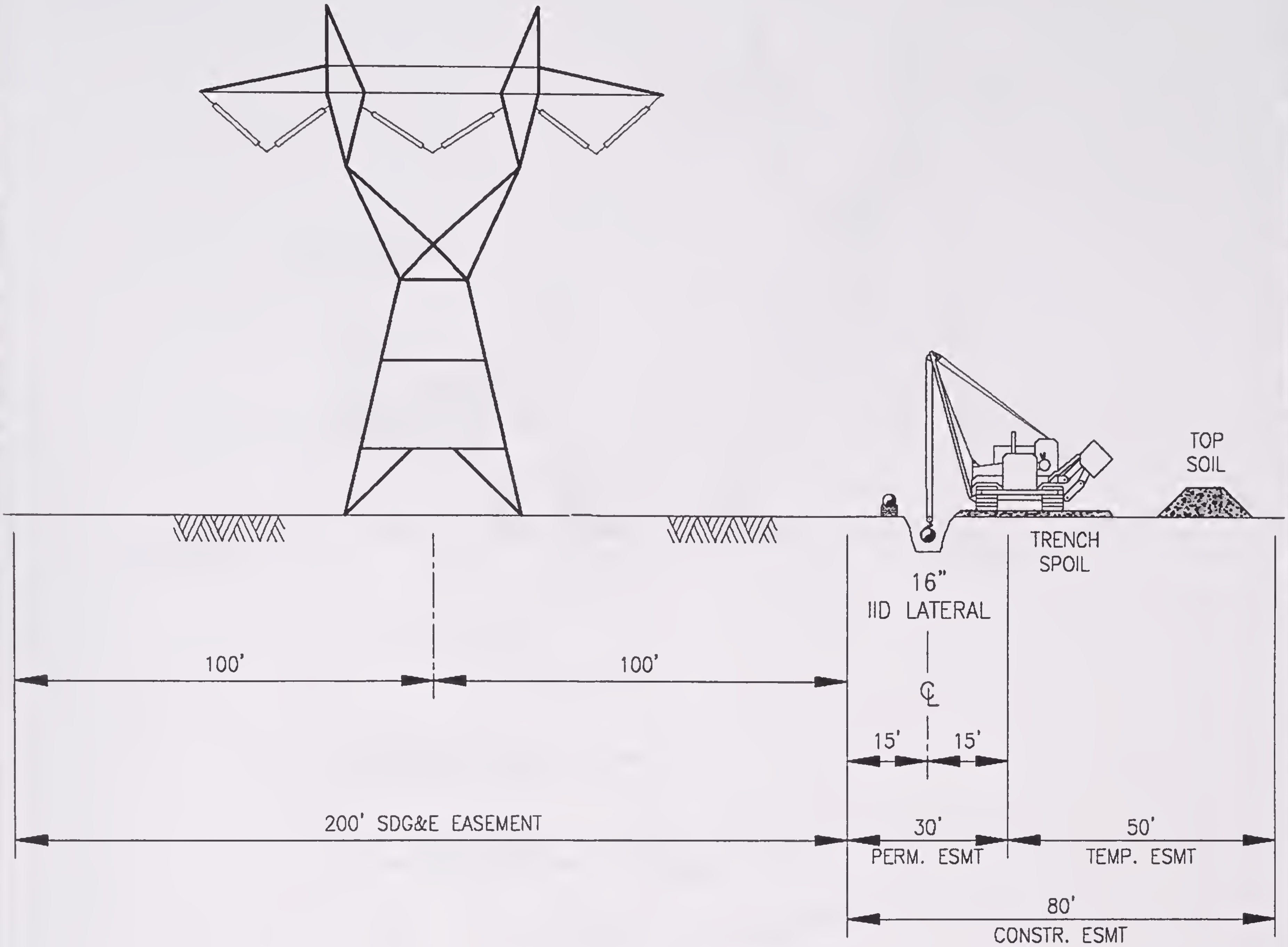
M.P. 0.3 TO M.P. 0.6
LOOKING NORTHERLY

NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

Figure C-2
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
BEI Lateral – MPs 0.3 to 0.6

Sheet 2 of 2



M.P. 0.0 TO M.P. 0.1
LOOKING SOUTH
M.P. 5.7 TO M.P. 8.5
LOOKING SOUTHWESTERLY
(without TOWER LINE)

M.P. 0.1 TO M.P. 2.2
LOOKING WESTERLY
(CO-LOCATE with STEEL TOWER LINE)

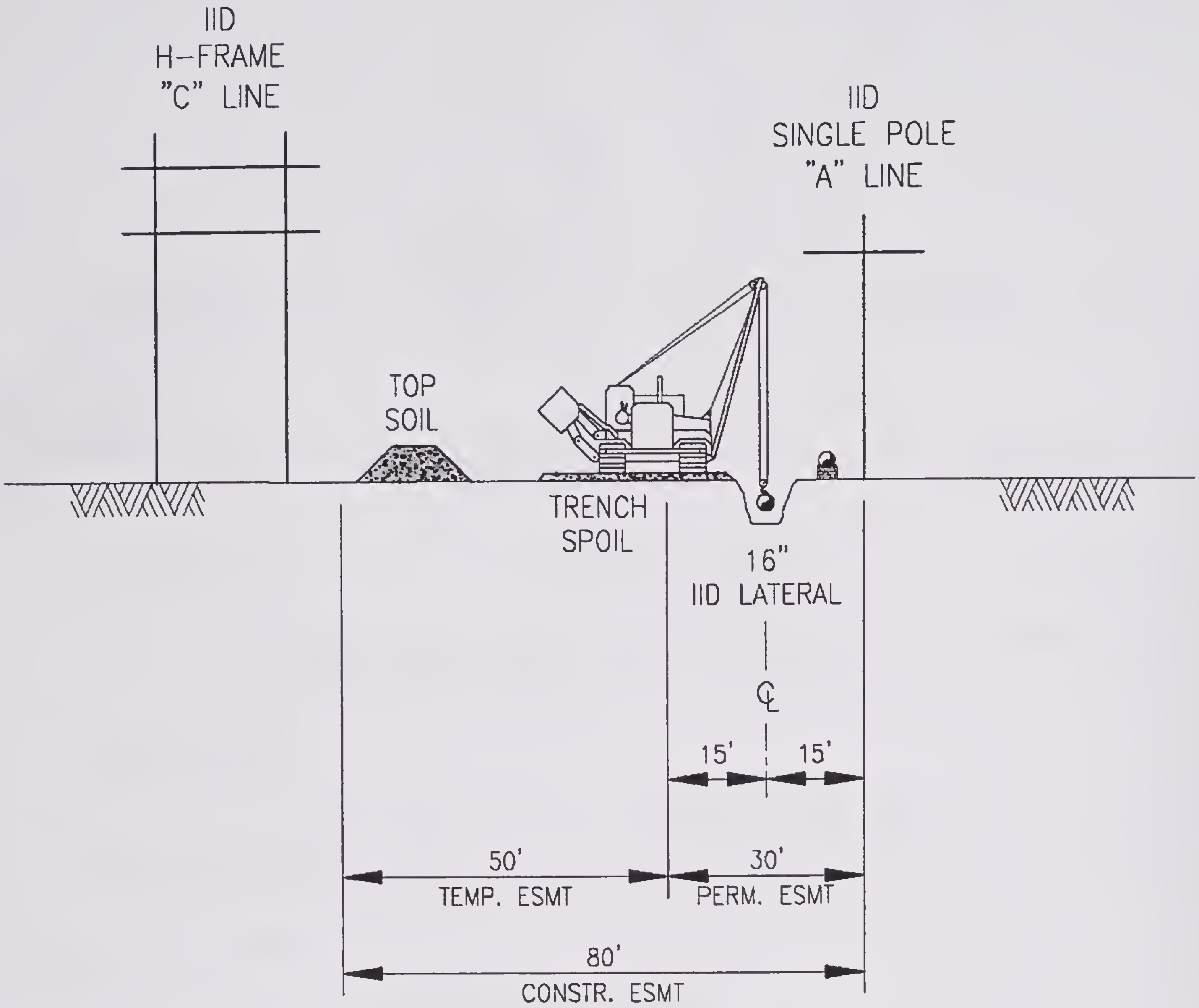
NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 0.0 to 8.5

Sheet 1 of 12

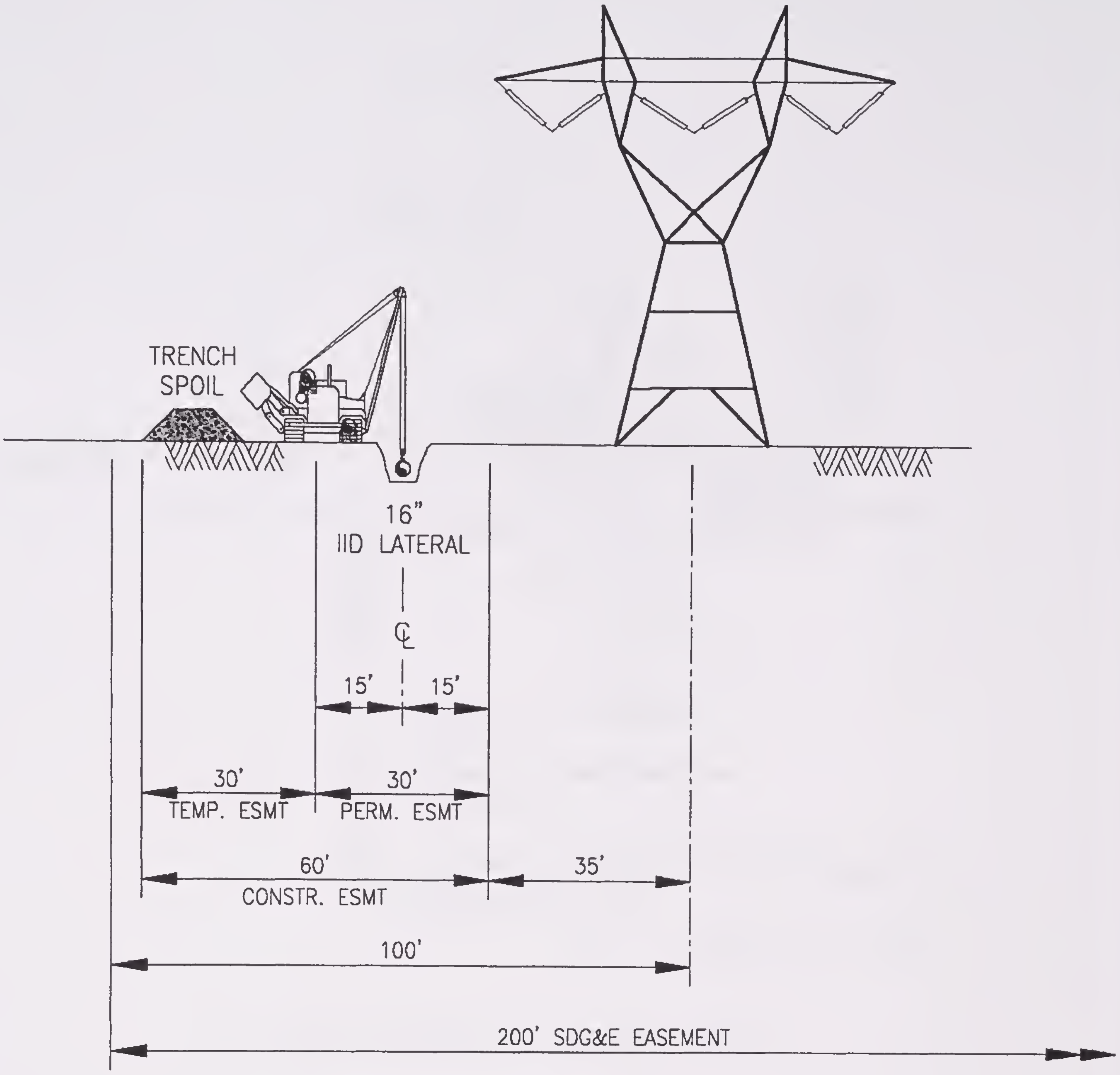


M.P. 2.6 TO M.P. 3.5
LOOKING WESTERLY
M.P. 5.4 TO M.P. 5.6
LOOKING SOUTHERLY
(without IID POWER LINES)

M.P. 3.5 TO M.P. 4.4
LOOKING WESTERLY
M.P. 5.1 TO M.P. 5.4
LOOKING SOUTHERLY
(CO-LOCATE with IID POWER LINES)

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 2.6 to 5.6

Sheet 2 of 12



M.P. 4.4 TO M.P. 4.8
LOOKING WESTERLY

M.P. 4.8 TO M.P. 5.1
LOOKING WESTERLY
(TRANSITIONING UNDER POWER LINES)

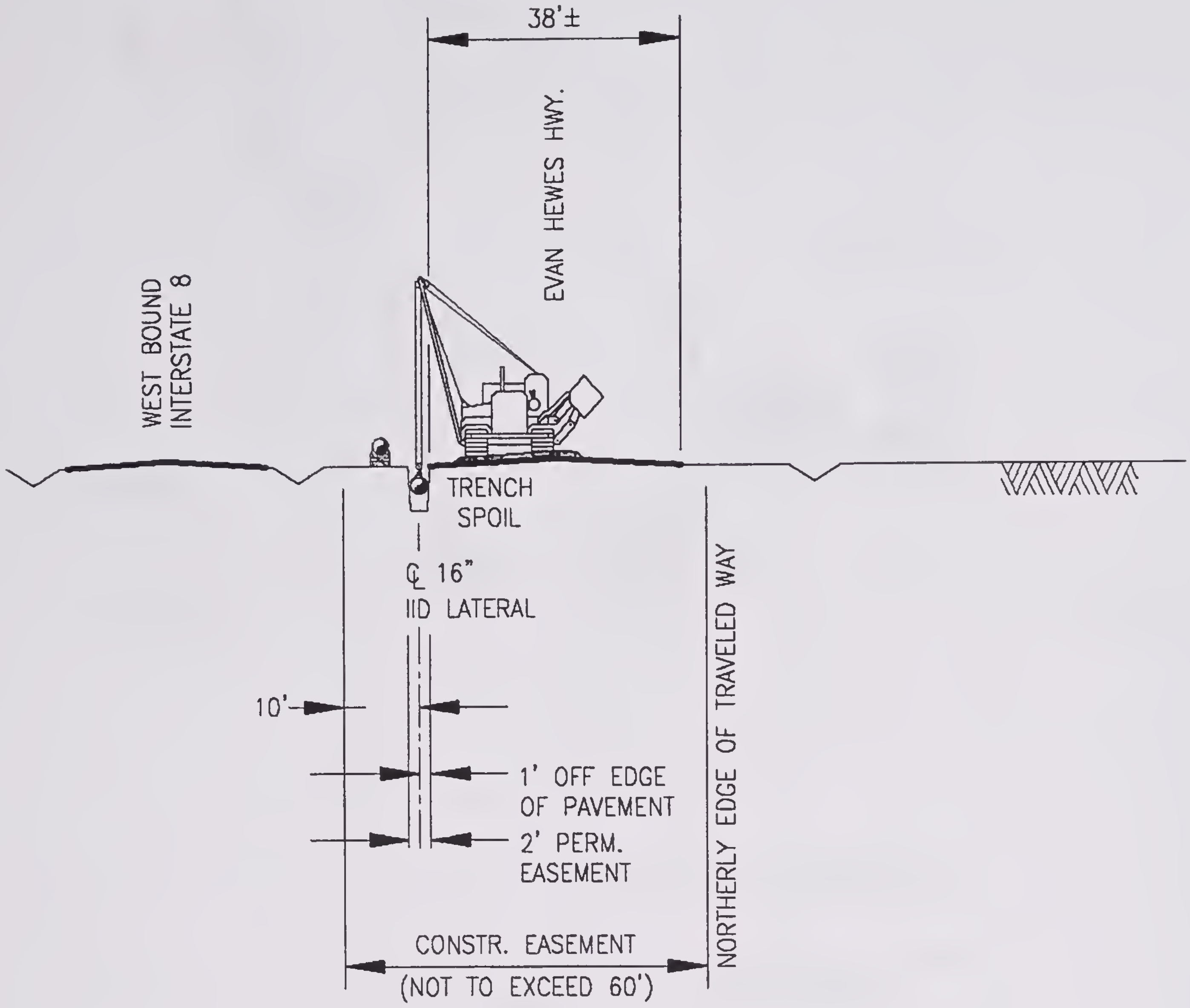
NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 4.4 to 5.1

Sheet 3 of 12



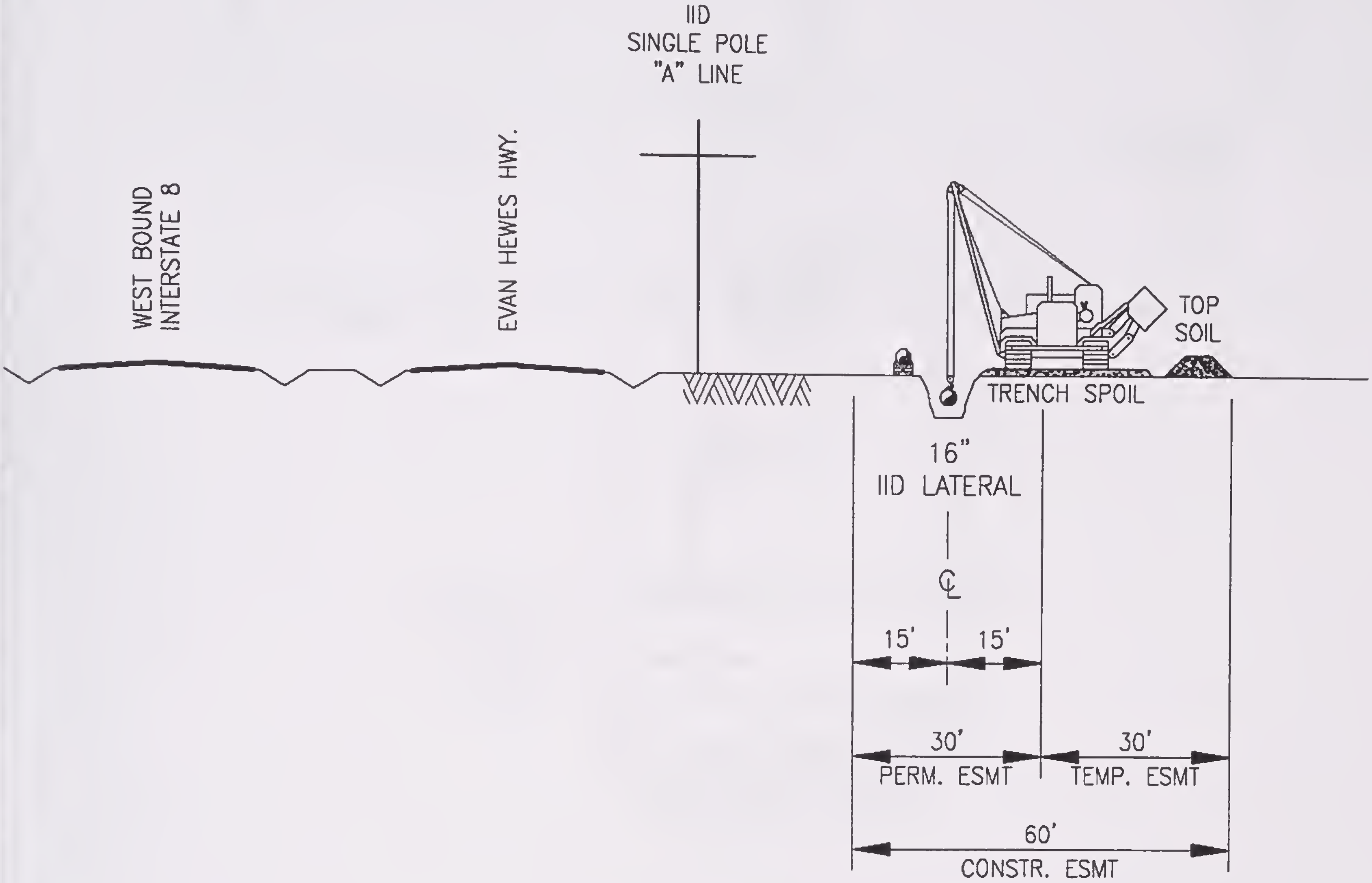
M.P. 8.5 TO M.P. 13.6
LOOKING WESTERLY

M.P. 26.0 TO M.P. 27.1
LOOKING WESTERLY

NOTE:

NOMINAL 60' CONSTRUCTION RIGHT-OF-WAY TO BE CONFINED TO THE TRAVELED WAY AND SHOULDERS EXCEPT AT ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 8.5 to 27.1



CO-LOCATE WITH IID POWER LINES

M.P. 13.6 TO M.P. 16.2
LOOKING WESTERLY

(BROCK RESEARCH CENTER TO HWY. 98 TAKEOFF)

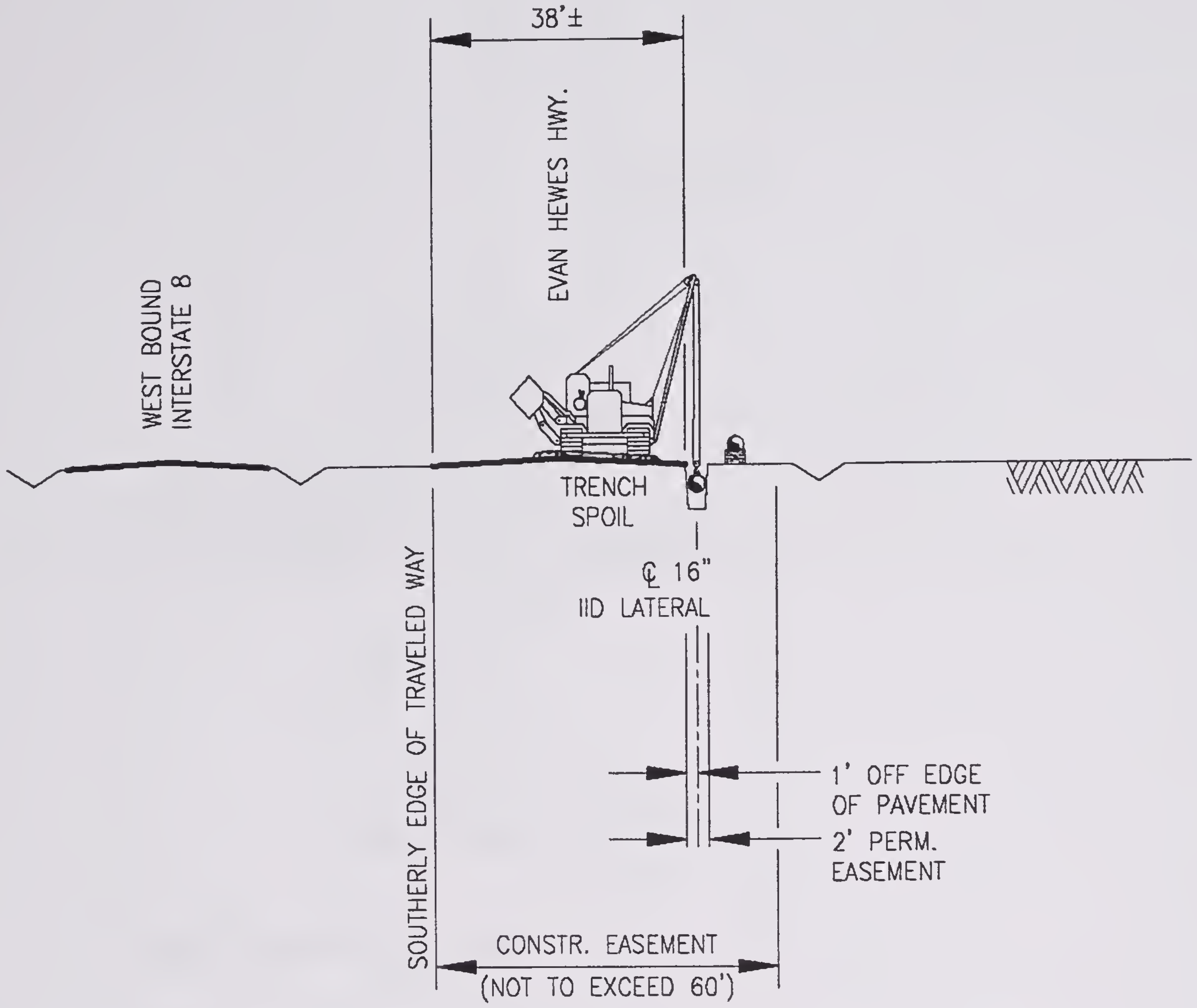
NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 13.6 to 16.2

Sheet 5 of 12



CO-LOCATE WITH EVAN HEWES HWY.

M.P. 16.2 TO M.P. 26.0
LOOKING WESTERLY

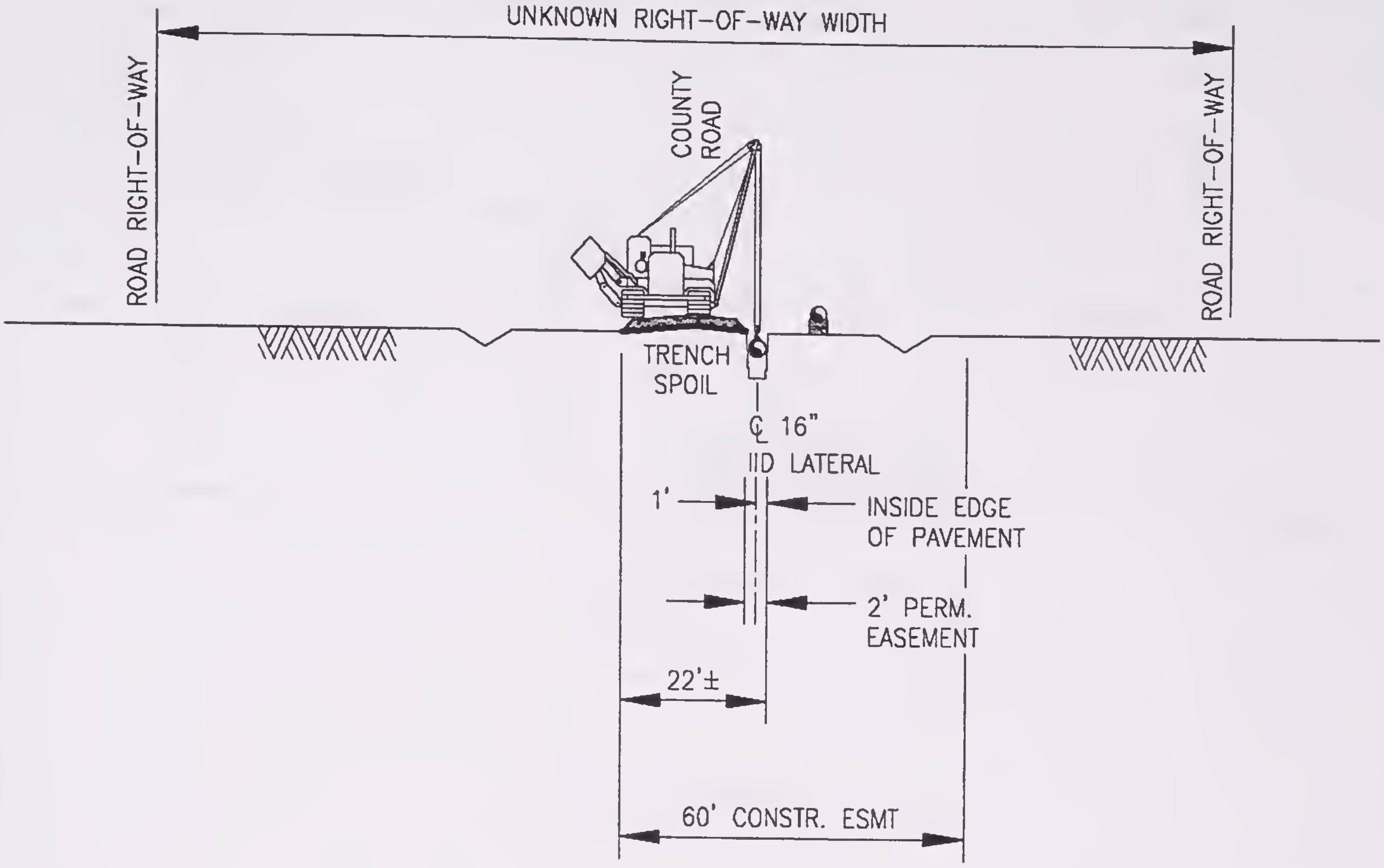
(HWY. 98 TAKEOFF TO EAST HIGHLINE CANAL)

NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 16.2 to 26.0



M.P. 27.6 TO M.P. 33.9
M.P. 34.5 TO M.P. 34.9
M.P. 35.9 TO 38.65
LOOKING WEST

M.P. 38.65 TO M.P. 38.9
LOOKING NORTH

M.P. 40.4 TO M.P. 41.4
LOOKING WEST

M.P. 41.4 TO M.P. 42.1
LOOKING NORTH

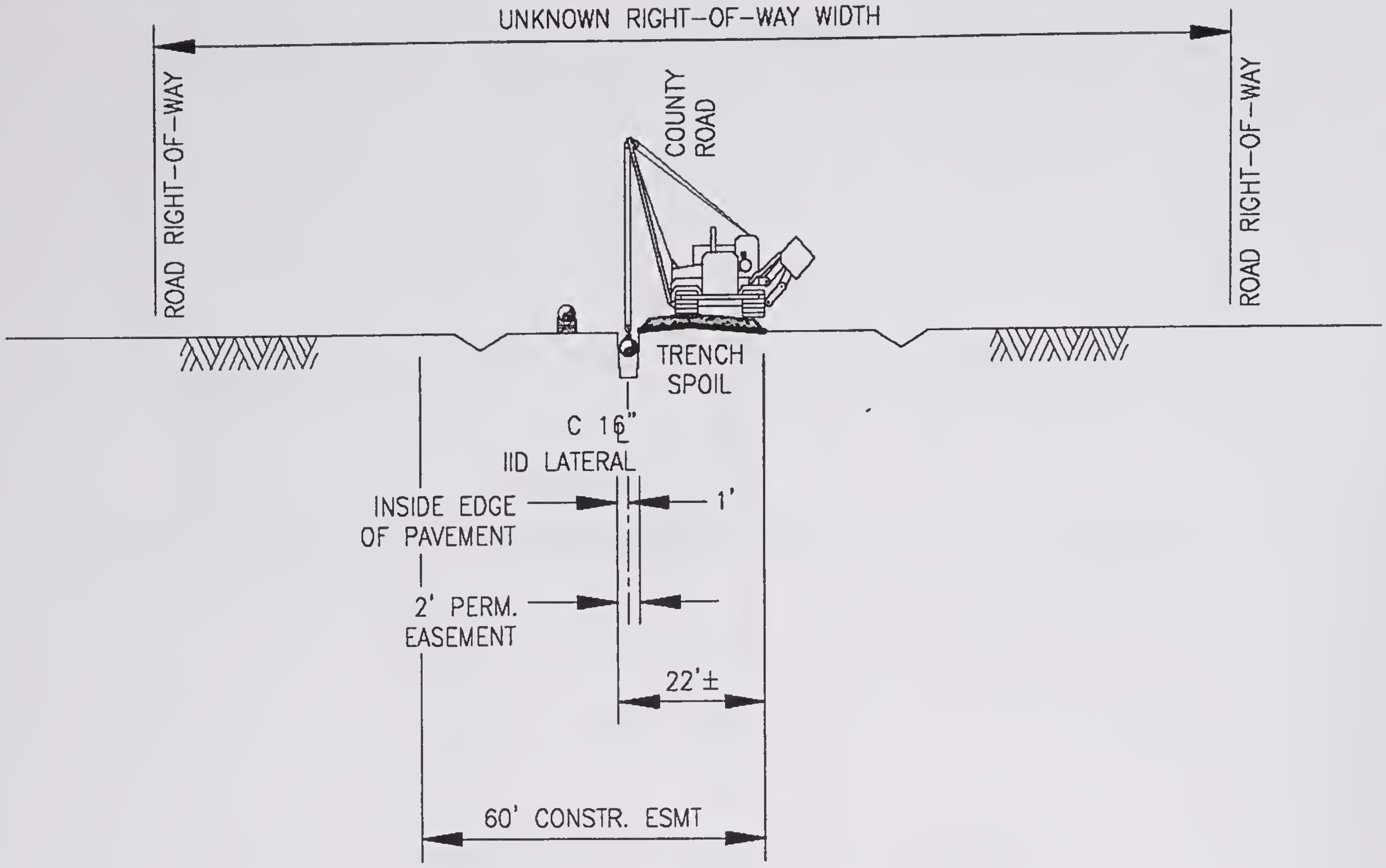
NOTE:

NOMINAL 60' CONSTRUCTION RIGHT-OF-WAY TO BE CONFINED TO THE TRAVELED WAY AND SHOULDERS EXCEPT AT ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 27.6 to 42.1

Sheet 7 of 12



PIPELINE IN ROAD R.O.W./OFF PAVEMENT.

M.P. 34.9 TO M.P. 35.9
M.P. 39.7 TO M.P. 40.4
LOOKING WEST

M.P. 42.1 TO M.P. 42.9
LOOKING NORTH

M.P. 42.9 TO M.P. 43.4
LOOKING WESTERLY

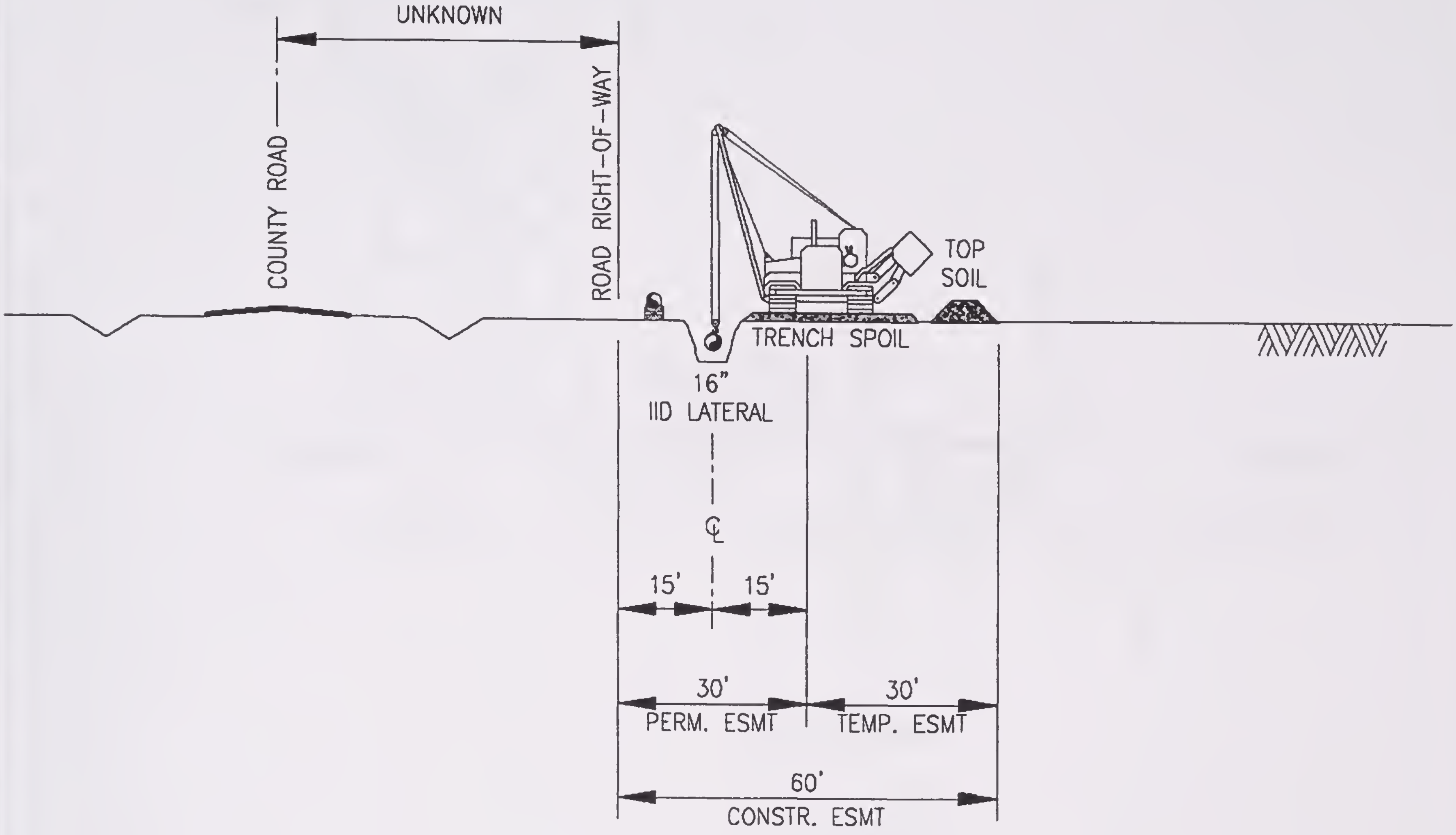
NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 34.9 to 43.4

Sheet 8 of 12



PIPELINE IN PRIVATE R.O.W.

M.P. 33.9 TO M.P. 34.5
LOOKING WEST

M.P. 38.9 TO M.P. 39.7
LOOKING NORTH

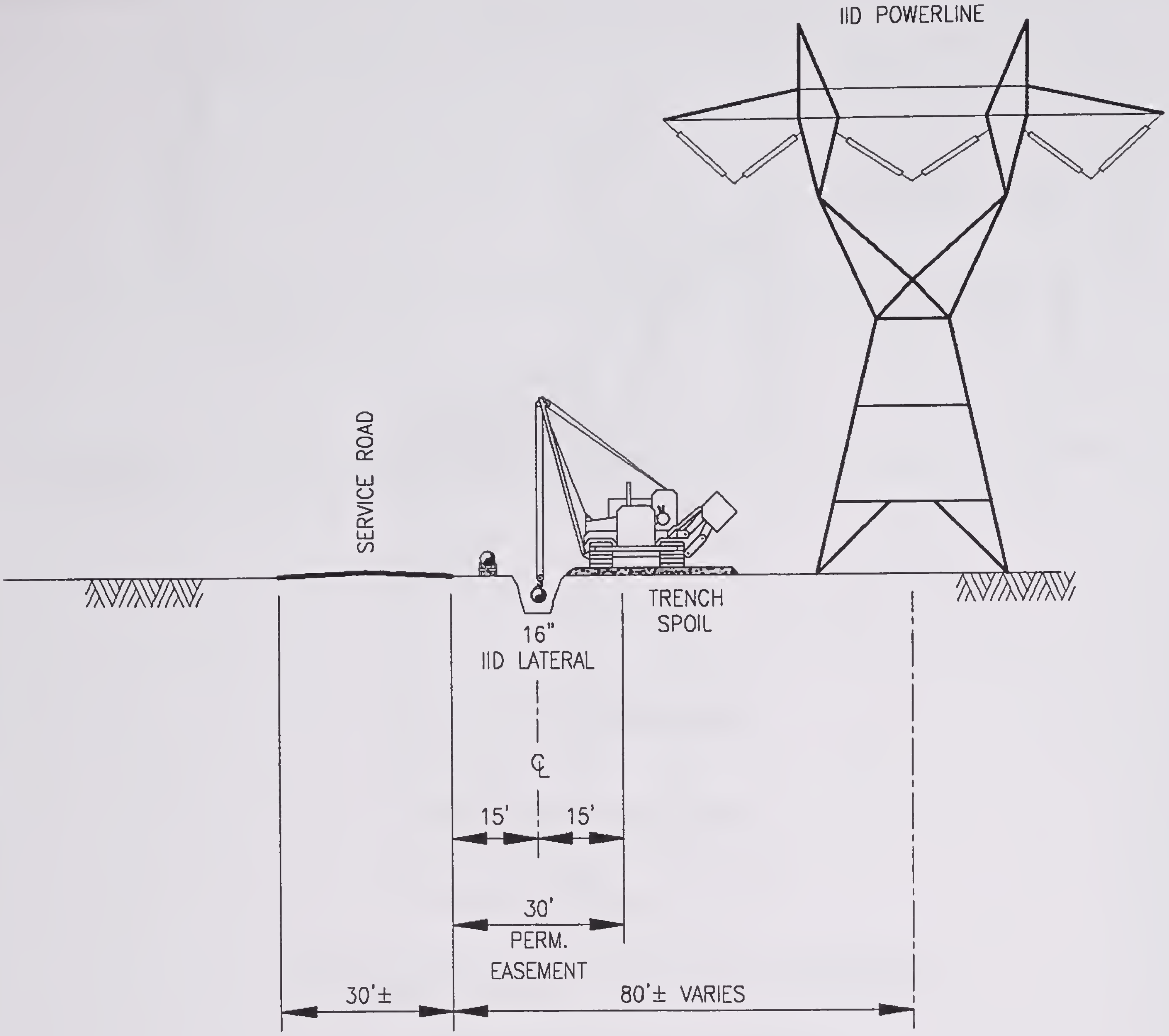
NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 33.9 to 39.7

Sheet 9 of 12



CO-LOCATE WITH STEEL TOWER POWER LINE AND STREET

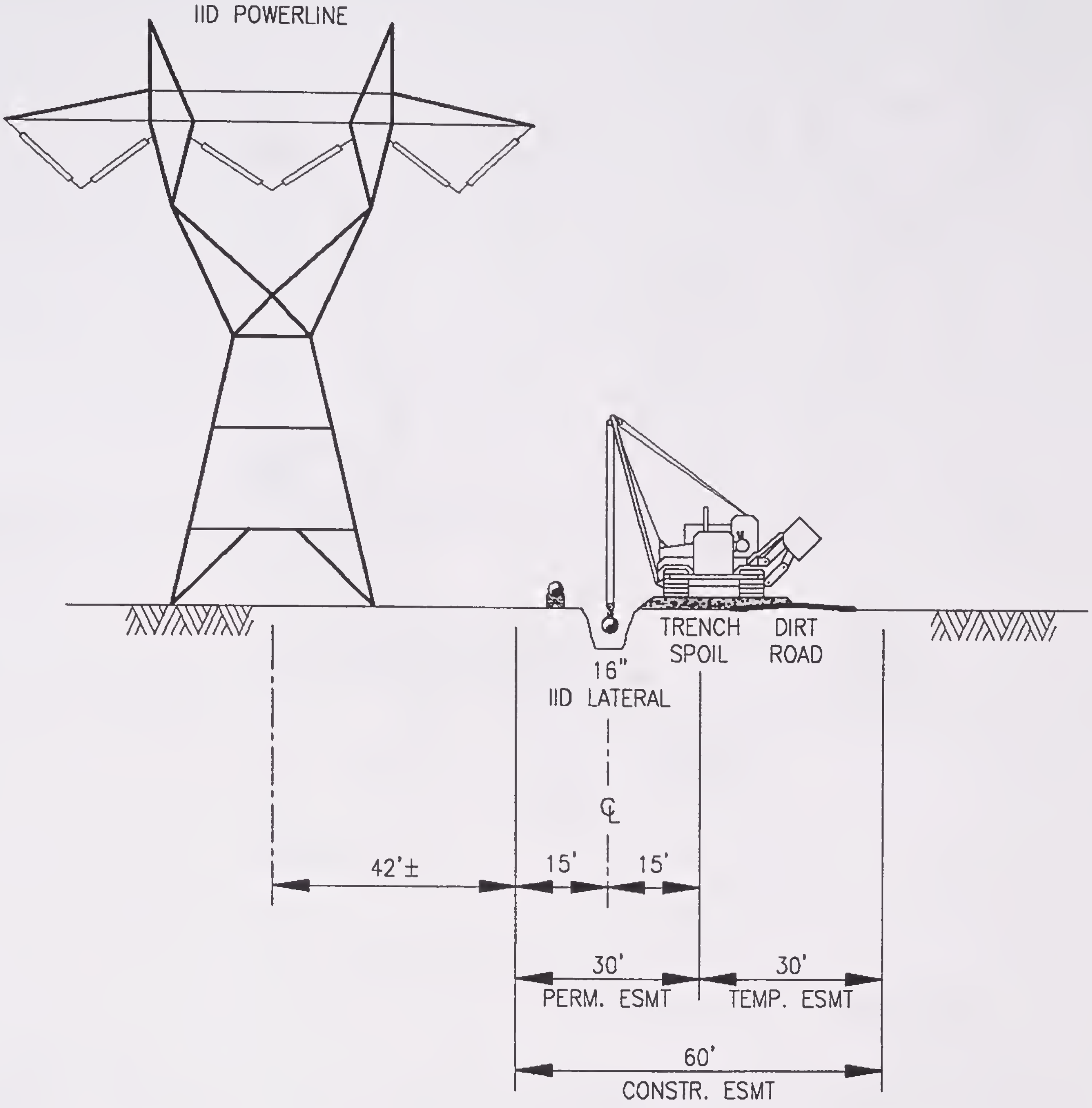
M.P. 43.4 TO M.P. 43.6
LOOKING NORTH

NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 43.4 to 43.6



CO-LOCATE WITH STEEL TOWER POWER LINE AND PROPERTY LINE

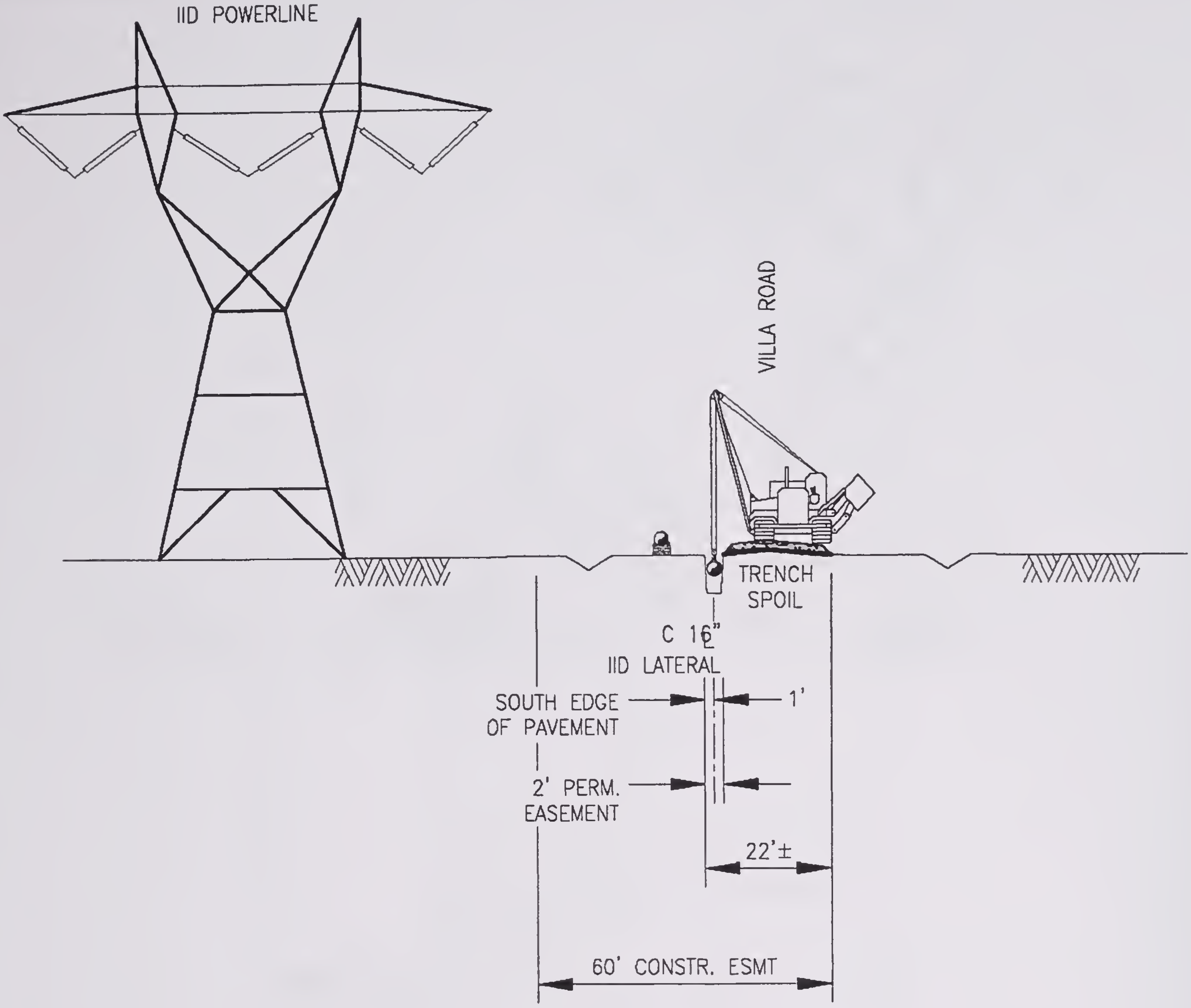
M.P. 43.6 TO M.P. 44.1
LOOKING WEST

NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 43.6 to 44.1



CO-LOCATE WITH STEEL TOWER POWER LINE AND STREET

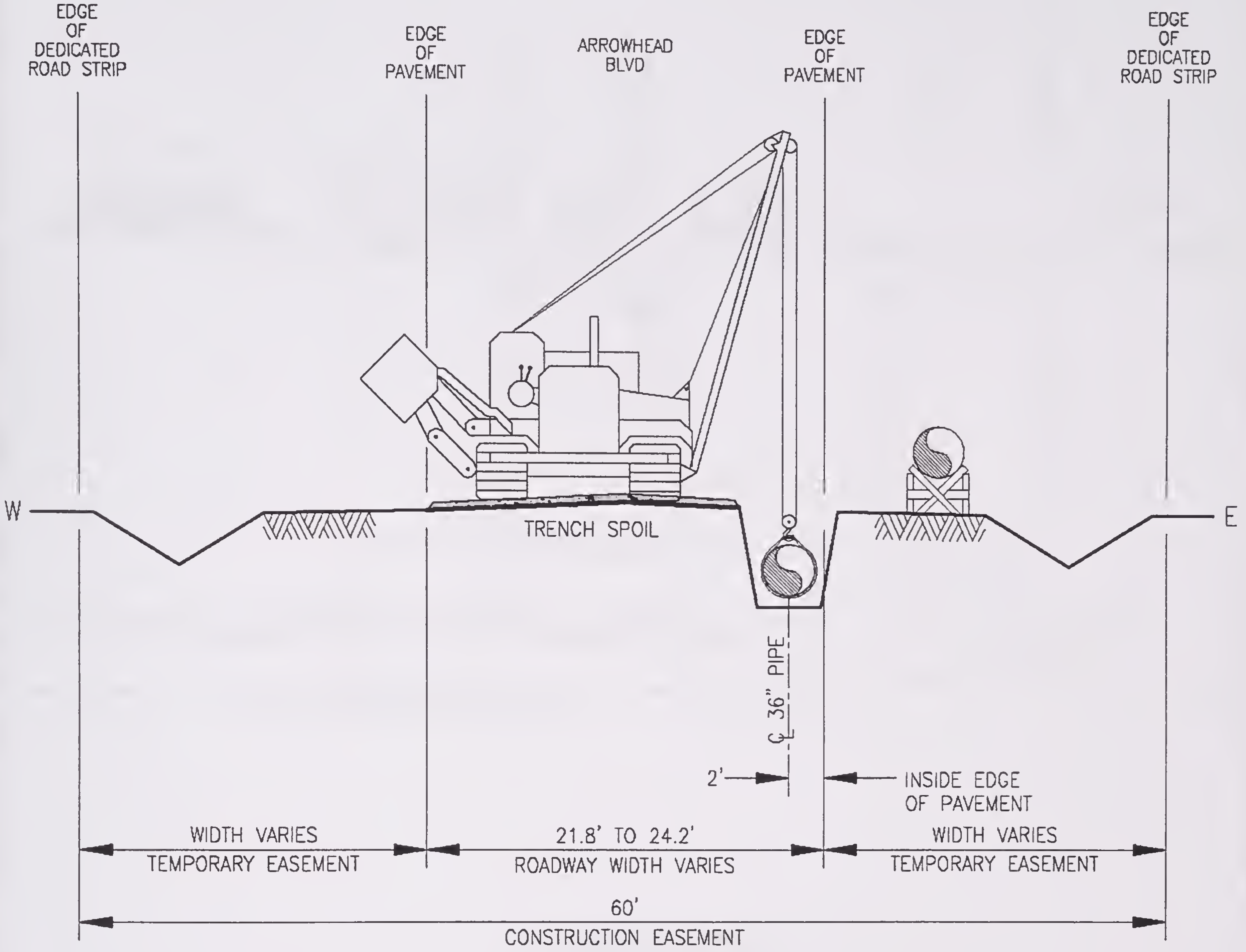
M.P. 44.1 TO M.P. 45.6
LOOKING WEST

NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-3
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
IID Lateral – MPs 44.1 to 45.6



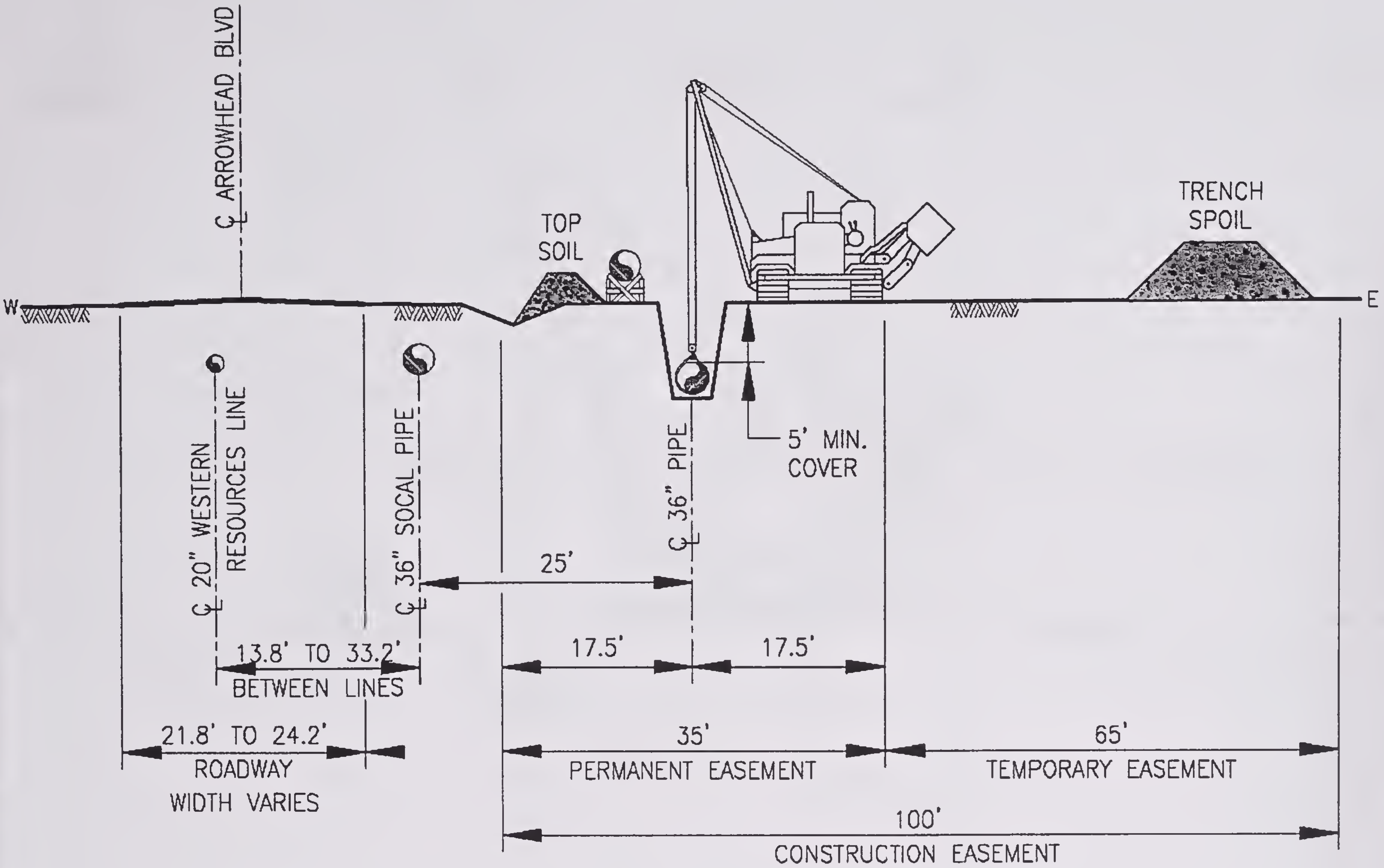
LOOKING NORTH
M.P. 0.0 TO M.P. 1.0

NOTE:

NOMINAL 60' CONSTRUCTION RIGHT-OF-WAY TO BE CONFINED TO THE TRAVELED WAY AND SHOULDERS EXCEPT AT ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

Figure C-4
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
Arrowhead Alternative

Sheet 1 of 3



LOOKING NORTH
M.P. 1.0 TO M.P. 1.5

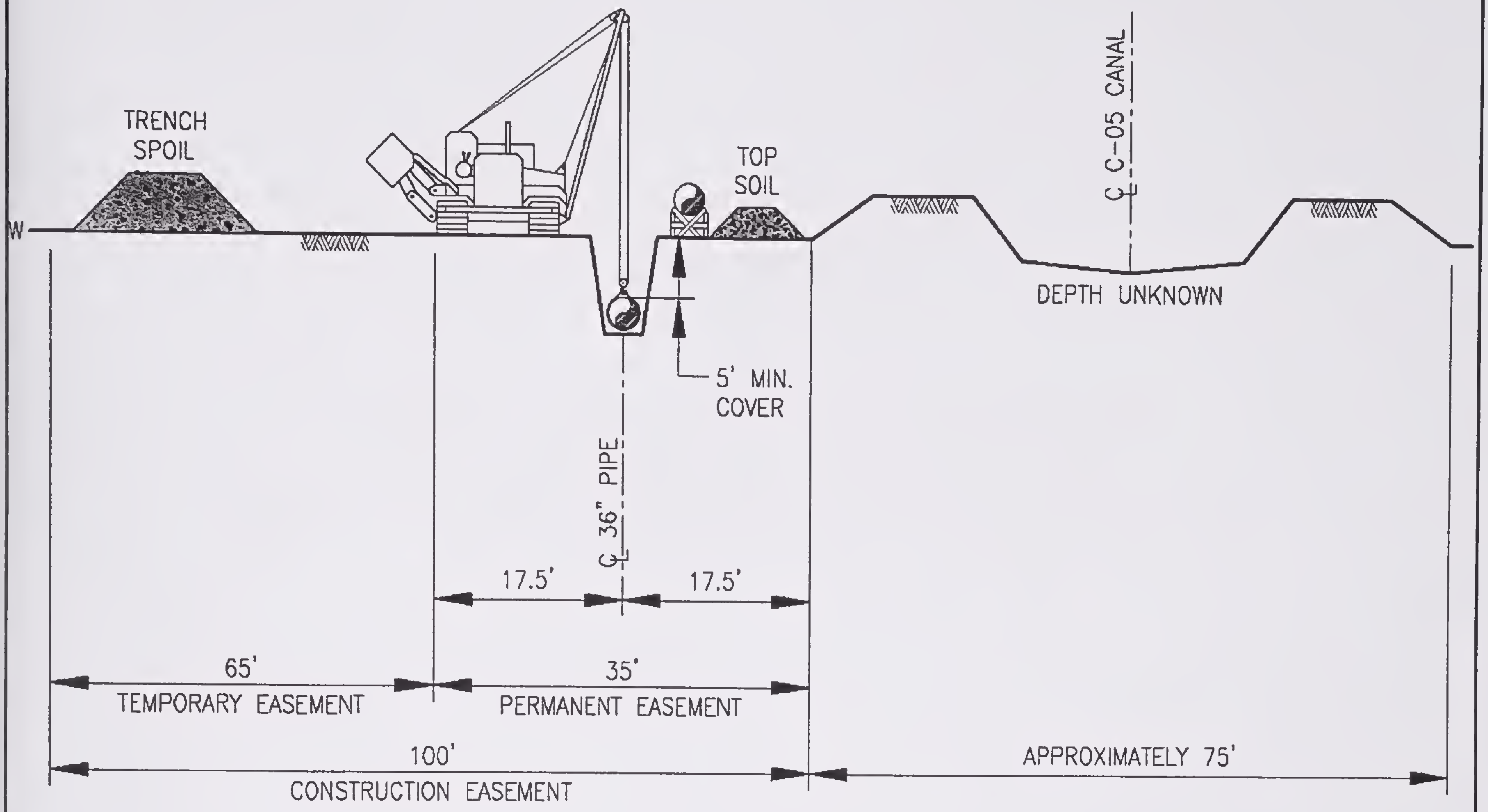
NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-4
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
Arrowhead Alternative

Sheet 2 of 3



LOOKING NORTH
M.P. 1.5 TO M.P. 2.0

NOTE:

CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

WHERE GRADING IS REQUIRED AND NO BEDROCK IS AT THE SURFACE, APPROXIMATELY 2 TO 8 INCHES OF SOIL ACROSS THE ENTIRE WIDTH OF THE GRADED WORK AREA WILL BE STOCKPILED FOR RESTORATION PURPOSES. IN AGRICULTURAL AREAS, 1 TO 2 FEET OF TOPSOIL WILL BE STRIPPED AND STOCKPILED SEPARATELY FROM THE TRENCH SPOIL.

Figure C-4
North Baja Pipeline Expansion Project
Typical Right-of-Way Cross Sections
Arrowhead Alternative

Sheet 3 of 3

APPENDIX D

TEMPORARY EXTRA WORKSPACES AND ACCESS ROADS ASSOCIATED WITH THE NORTH BAJA PIPELINE EXPANSION PROJECT

TABLE D-1

Temporary Extra Workspaces Associated with the North Baja Pipeline Expansion Project

County, State	Milepost	Description	Dimensions (feet)	Acres	Acres of New Disturbance
B-Line					
La Paz, Arizona					
	0.0	Colorado River Pullback - East Side (AZ)	200 x 2,575	11.8	1.5
		Subtotal		**11.8**	**1.5**
Riverside, California					
	0.4	Colorado River - West Side (CA)	50 x 241	0.3	0.1
	1.1	East	25 x 400	0.2	0.2
	1.3	East	25 x 800	0.5	0.5
	1.3	D-10-13-42E Canal - East & North	50 x 200	0.2	0.1
	1.3	D-10-13-42E Canal - East & South	50 x 200	0.2	0.1
	1.3	East	25 x 1,590	0.9	0.9
	1.6	East	15 x 260	0.1	0.1
	1.7	D-10-13-45E Canal - East & North	50 x 200	0.2	0.1
	1.7	D-10-13-45E Canal - East & South	50 x 200	0.2	0.1
	1.7	East	15 x 600	0.2	0.2
	1.9	D-10-13-47E Canal - East & North	50 x 200	0.2	0.1
	1.9	D-10-13-47E Canal - East & South	50 x 200	0.2	0.1
	1.9	East	15 x 400	0.1	0.1
	2.2	D-10-13-49E Canal - East & North	50 x 200	0.2	0.1
	2.2	D-10-13-49E Canal - East & South	50 x 200	0.2	0.1
	2.2	East	15 x 200	0.1	0.1
	2.3	D-10-13 (F) Canal - East & South	100 x 200	0.5	0.1
	2.3	D-10-13 (F) Canal - West & North	50 x 200	0.2	0.1
	2.3	D-10-13 (F) Canal - West & South (Triangular)	66 x 317	0.5	0.2
	2.3	West	15 x 1,600	0.6	0.6
	2.7	D-10-11-2N Canal - East & North	50 x 200	0.2	0.1
	2.7	D-10-11-2N Canal - West & North	50 x 200	0.2	0.1
	2.7	North	15 x 900	0.3	0.3
	2.9	D-10 Canal - East & North	75 x 200	0.3	0.1
	3.2	East Side Drain - East & North	75 x 200	0.3	0.1
	3.2	East Side Drain - West & South	75 x 200	0.3	0.1
	3.4	Intake Blvd./Goodman Drain - East & South	75 x 200	0.3	0.1
	3.4	Intake Blvd./Goodman Drain - West & South	75 x 200	0.3	0.1
	3.6	D-Siphon-89 Canal - East & South	75 x 200	0.3	0.1
	3.6	D-Siphon-89 Canal - West & North	75 x 200	0.3	0.1
	3.9	Private Canal (Jones Rd.) - East & South	75 x 200	0.3	0.1
	3.9	Private Canal (Jones Rd.) - West & North	75 x 200	0.3	0.1
	4.4	D-19 Canal/C&D Blvd. - East & North	75 x 200	0.3	0.1
	4.4	D-19 Canal/C&D Blvd. - West & North	65 x 45	0.1	0.0
	4.4	D-19 Canal/C&D Blvd. - West & North	40 x 105	0.1	0.1
	4.4	D-19 Canal/C&D Blvd. - East & South	75 x 200	0.3	0.1
	4.4	D-19 Canal/C&D Blvd. - East & South	20 x 20	0.0	0.0
	4.7	D-19-4N Canal - West & North	75 x 200	0.3	0.1
	4.9	South Broadway - East & North	75 x 200	0.3	0.1
	4.9	South Broadway - West & North	75 x 200	0.3	0.1
	4.9	South Broadway - East & South	75 x 200	0.3	0.1

TABLE D-1 (cont'd)

Temporary Extra Workspaces Associated with the North Baja Pipeline Expansion Project

County, State	Milepost	Description	Dimensions (feet)	Acres	Acres of New Disturbance
	4.9	South Broadway - East & South	30 x 30	0.0	0.0
	5.2	Lovekin Drain - East & South	75 x 150	0.3	0.1
	5.2	Lovekin Drain - West & North	75 x 150	0.3	0.1
	5.4	AZ & CA RR/Lovekin Blvd. - East & North	75 x 150	0.3	0.1
	5.4	AZ & CA RR/Lovekin Blvd. - Center & North	75 x 198	0.3	0.1
	5.4	AZ & CA RR/Lovekin Blvd. - West & South	50 x 120	0.1	0.1
	5.4	AZ & CA RR/Lovekin Blvd. - West & South	10 x 140	0.0	0.0
	5.9	C-Siphon-56 Canal - East & South	75 x 200	0.3	0.1
	5.9	C-Siphon-56 Canal - West & South	75 x 200	0.3	0.1
	6.4	De Frain Blvd. - East & South	75 x 200	0.3	0.1
	6.4	De Frain Blvd. - West & North	75 x 150	0.3	0.1
	6.9	Central Drain - East & North	75 x 200	0.3	0.1
	6.9	Central Drain - West & North	75 x 200	0.3	0.1
	7.4	Arrowhead Blvd. - East & North	75 x 150	0.3	0.1
	7.4	Arrowhead Blvd. - West & South	75 x 150	0.3	0.1
	7.9	C-05 Canal - East & South	200 x 150	0.7	0.1
	7.9	C-05 Canal - West & South	75 x 200	0.3	0.1
	8.2	Private Concrete Culvert - East & South	75 x 200	0.3	0.1
	8.2	Private Concrete Culvert - West & South	75 x 200	0.3	0.1
	8.4	State Hwy. 78 (Neighbors Rd.) - East & South	75 x 200	0.3	0.1
	8.4	State Hwy. 78 (Neighbors Rd.) - West & South	75 x 200	0.3	0.1
	8.9	West Side Drain - East & South	75 x 150	0.3	0.1
	8.9	West Side Drain - West & South	75 x 150	0.3	0.1
	9.5	Stephenson Blvd./C-03 Canal - East & South	100 x 200	0.5	0.1
	9.5	Stephenson Blvd./C-03 Canal - Center & North	50 x 177	0.2	0.1
	9.5	Stephenson Blvd./C-03 Canal - Center & South	100 x 150	0.3	0.1
	9.9	C-03-64N Canal - East & North	75 x 200	0.3	0.1
	9.9	C-03-64N Canal - West & South	75 x 200	0.3	0.1
	10.3	C-03-16-3N Canal - East & North	150 x 100	0.3	0.1
	10.5	Keim Blvd./C-03-16 Canal - West & South	50 x 200	0.2	0.1
	10.7	C-03-16-6S Canal - East & South	50 x 200	0.2	0.1
	10.7	C-03-16-6S Canal - West & South	75 x 200	0.3	0.1
	11.0	C-03-16-1 & C-03-16-8W Canal - East & South	75 x 200	0.3	0.1
	11.0	C-03-16-1 & C-03-16-8W Canal - West & North	200 x 75	0.3	0.0
	11.2	Private Concrete Canal - East & South	75 x 200	0.3	0.1
	11.2	Private Concrete Canal - West & South	50 x 200	0.2	0.1
	11.5	Rannells Drain - East & North	110 x 550	1.4	0.3
	11.5	Rannells Drain - East & South	110 x 550	1.4	0.3
	11.5	Rannells Drain/Private Canal - West & North	110 x 516	1.3	0.3
	11.5	Rannells Drain/Private Canal - West & South	110 x 550	1.4	0.3
	11.6	Rannells Trap Site - East & North	50 x 385	0.4	0.2
	11.6	Rannells Trap Site - South	25 x 730	0.4	0.4
	11.7	Rannells Trap Site - West & North	25 x 255	0.1	0.1

TABLE D-1 (cont'd)

Temporary Extra Workspaces Associated with the North Baja Pipeline Expansion Project

County, State	Milepost	Description	Dimensions (feet)	Acres	Acres of New Disturbance
	16.9	Adjacent to T-Line	50 x 400	0.5	0.2
	17.1	Adjacent to T-Line	50 x 200	0.2	0.1
	17.8	Adjacent to T-Line	50 x 200	0.2	0.1
	17.9	Adjacent to T-Line	50 x 200	0.2	0.1
	20.1	Adjacent to T-Line	50 x 500	0.6	0.3
	20.2	Adjacent to T-Line	50 x 200	0.2	0.1
	22.5	Adjacent to T-Line	50 x 401	0.5	0.2
	22.5	Adjacent to T-Line	50 x 358	0.4	0.2
		Subtotal		**32.2**	**13.4**
Imperial, California					
	24.4	Unnamed Wash - North & West	50 x 100	0.1	0.1
	24.4	Unnamed Wash - South & West	50 x 100	0.1	0.1
	24.8	East and West of centerline	60 x 500	0.7	0.3
	24.9	Helms Wash - North & West	50 x 100	0.1	0.1
	24.9	Helms Wash - South & West	50 x 100	0.1	0.1
	28.1	East	50 x 200	0.2	0.1
	28.1	West	50 x 200	0.2	0.1
	28.2	State Hwy. 78 - North & West	50 x 150	0.2	0.1
	28.2	State Hwy. 78 - North & East	50 x 200	0.2	0.1
	28.2	State Hwy. 78 - South & West	50 x 200	0.2	0.1
	28.2	State Hwy. 78 - South & East	50 x 150	0.2	0.1
	28.4	East of SR 78 & West of Pipeline	50 x 1,400	1.6	0.8
	29.2	East of SR 78 & West of Pipeline	50 x 250	0.3	0.1
	29.3	East of SR 78 & West of Pipeline	50 x 200	0.2	0.1
	31.8A	East of SR 78 & Pipeline	75 x 876	1.5	0.5
	32.0A	East of SR 78 & West of Pipeline	50 x 660	0.8	0.4
	32.6	East of SR 78 & West of Pipeline	50 x 1,100	1.3	0.6
	35.1	South of SR 78	50 x 1,660	1.9	1.0
	35.0	North of SR 78	50 x 200	0.2	0.1
	35.4	South of SR 78	50 x 2,740	3.1	1.6
	35.8	North of SR 78	50 x 200	0.2	0.1
	36.1	North of SR 78	100 x 200	0.5	0.1
	36.3	South of SR 78	100 x 300	0.7	0.2
	36.5	South of SR 78	50 x 600	0.7	0.3
	37.2	North of SR 78	50 x 700	0.8	0.4
	37.2	South of SR 78	50 x 700	0.8	0.4
	37.9	South of SR 78	50 x 3,800	4.4	2.2
	38.6	North of SR 78	100 x 200	0.5	0.1
	39.2	North of SR 78	50 x 2,400	2.8	1.4
	39.7	North of SR 78	50 x 200	0.2	0.1
	39.7	South of SR 78	50 x 200	0.2	0.1
	39.9	North of SR 78	50 x 600	0.7	0.3
	39.9	South of SR 78	50 x 600	0.7	0.3
	40.5	North of SR 78	100 x 200	0.5	0.1
	40.6	North of SR 78	50 x 400	0.5	0.2
	40.6	South of SR 78	50 x 400	0.5	0.2
	41.2	East of SR 78 & West of Pipeline	50 x 400	0.5	0.2
	41.2	East of SR 78 & East of Pipeline	50 x 400	0.5	0.2

TABLE D-1 (cont'd)

Temporary Extra Workspaces Associated with the North Baja Pipeline Expansion Project

County, State	Milepost	Description	Dimensions (feet)	Acres	Acres of New Disturbance
	41.4	East of SR 78 & West of Pipeline	50 x 200	0.2	0.1
	41.4	East of SR 78 & East of Pipeline	50 x 200	0.2	0.1
	41.6	SR 78	30 x 120	0.1	0.1
	42.1	East of SR 78 & West of Pipeline	100 x 200	0.5	0.1
	42.2	East of SR 78 & East of Pipeline	95 x 244	0.5	0.1
	42.3	East of SR 78 & West of Pipeline	50 x 400	0.5	0.2
	42.3	East of SR 78 & East of Pipeline	50 x 400	0.5	0.2
	42.7	East of SR 78 & West of Pipeline	100 x 200	0.5	0.1
	43.3	East of SR 78 & West of Pipeline	100 x 200	0.5	0.1
	43.5	East of SR 78 & West of Pipeline	50 x 200	0.2	0.1
	43.5	East of SR 78 & East of Pipeline	50 x 200	0.2	0.1
	43.6	East of SR 78 & West of Pipeline	50 x 300	0.3	0.2
	43.6	East of SR 78 & East of Pipeline	50 x 300	0.3	0.2
	44.5	East of SR 78 & East of Pipeline	50 x 400	0.5	0.2
	44.5	East of SR 78 & West of Pipeline	40 x 530	0.5	0.3
	44.6		100 x 200	0.5	0.1
	44.9	East of SR 78 & West of Pipeline	40 x 110	0.1	0.1
	44.9		100 x 200	0.5	0.1
	45.0		50 x 640	0.7	0.4
	45.2	East of SR 78 & West of Pipeline	50 x 250	0.3	0.1
	46.3	East of SR 78 & East of Pipeline	50 x 400	0.5	0.2
	46.3	East of SR 78 & West of Pipeline	50 x 400	0.5	0.2
	46.9	East of SR 78 & East of Pipeline	50 x 430	0.5	0.2
	47.1	East of SR 78 & West of Pipeline	50 x 200	0.2	0.1
	47.1	East of SR 78 & East of Pipeline	50 x 200	0.2	0.1
	47.1	East of SR 78 & East of Pipeline	30 x 320	0.2	0.2
	50.2	East of SR 78 & West of Pipeline	50 x 300	0.3	0.2
	50.4	East of SR 78 & West of Pipeline	50 x 500	0.6	0.3
	52.2	East of SR 78 & West of Pipeline	50 x 2,476	2.8	1.4
	53.0	East of SR 78 & West of Pipeline	50 x 500	0.6	0.3
	53.2	East of SR 78 & West of Pipeline	50 x 250	0.3	0.1
	55.0	Ogilby Road (County Rd. S-34) - North & East	50 x 150	0.2	0.1
	55.0	Ogilby Road (County Rd. S-34) - South & East	50 x 41	0.0	0.0
	55.0	Ogilby Road (County Rd. S-34) - South & West	50 x 316	0.4	0.2
	55.6	Ogilby Road (County Rd. S-34)	25 x 1,500	0.9	0.9
	55.6	Ogilby Road (County Rd. S-34)	25 x 1,500	0.9	0.9
	60.3	Ogilby Road and MLV	50 x 200	0.2	0.1
	60.3	Ogilby Road and MLV	50 x 200	0.2	0.1
	61.6	Walker Way Road	50 x 1,300	1.5	0.7
	62.8	Walker Way Road	50 x 9,348	10.7	5.4
	64.6	Walker Way Road	50 x 7,547	8.7	4.3
	66.5	Gold Rock Ranch Rd. - North & West	50 x 150	0.2	0.1
	66.5	Gold Rock Ranch Rd. - South & West	50 x 150	0.2	0.1
	69.7	Ogilby Road (Co. Rd. S-34) at Amer. Girl Wash	50 x 1,000	1.1	0.6
	71.2	Union Pacific Railroad - North & West	50 x 150	0.2	0.1

TABLE D-1 (cont'd)

Temporary Extra Workspaces Associated with the North Baja Pipeline Expansion Project

County, State	Milepost	Description	Dimensions (feet)	Acres	Acres of New Disturbance
	71.2	Union Pacific Railroad - South & West	50 x 150	0.2	0.1
	74.5	Ogilby Rd. (County Rd. S-34) - North & West	50 x 66	0.1	0.0
	74.5	Ogilby Rd. (County Rd. S-34) - North & East	50 x 198	0.2	0.1
	74.5	Ogilby Rd. (County Rd. S-34) - South & East	50 x 170	0.2	0.1
	74.5	Ogliby Rd. (County Rd. S-34) - South & West	50 x 137	0.2	0.1
	75.2	Ogliby Meter Station	50 x 550	0.6	0.3
	75.3	Interstate 8 - Center Median	50 x 50	0.1	0.0
	75.3	Interstate 8 - South & West	75 x 200	0.3	0.1
	75.3	Interstate 8 - South & West	300 x 300	2.1	0.2
	75.3	Interstate 8 - South & East	50 x 200	0.2	0.1
	76.8	Acc. Rd IMCA-28 at OH Pwr Ln (Triangular)	40 x 75	0.1	0.0
	79.6	All American Canal Pullback - North Side	200 x 2,517	11.6	1.4
	79.8	All American Canal - South Side (USA)	50 x 160	0.2	0.1
		Subtotal		**84.2**	**36.4**
		B-Line Total		**128.2**	**51.2**
BEI Lateral					
	0.7	Intersect Rivera Dr.	36 x 50 x 146	0.1	0.1
		BEI Lateral Total		**0.1**	**0.1**
IID Lateral					
	0.0	IID Lateral Tap	200 x 203	0.9	0.9
	2.0	All-American Canal Pullback East Side	200 x 2,700	12.4	12.4
	2.7	All-American Canal West Side	30 x 240	0.2	0.2
	3.4	State Park Road North	30 x 100	0.1	0.1
	3.4	State Park Road South	30 x 65	0.0	0.0
	4.1	Grays Well Road East	25 x 100	0.1	0.1
	4.1	Grays Well Road West	25 x 100	0.1	0.1
	4.4	Grays Well Road North	25 x 100	0.1	0.1
	4.4	Grays Well Road South	25 x 100	0.1	0.1
	5.5	Grays Well Road North	25 x 100	0.1	0.1
	5.5	Grays Well Road South	25 x 100	0.1	0.1
	5.7	I-8 - South Side	50 x 75	0.1	0.1
	5.8	I-8 - North Side	50 x 90	0.1	0.1
	7.8	All-American Canal Pullback - East Side (Irregular Shape)	156 x 1,900	6.8	6.8
	8.1	All-American Canal - West Side	35 x 150	0.1	0.1
	8.6	Evan Hewes Hwy	50 x 100	0.1	0.1
	12.6	Ditch/Canal, SouthEast	25 x 75	0.0	0.0
	12.6	Ditch/Canal, SouthWest	25 x 75	0.0	0.0
	13.2	Brock Research Cntr Rd. SouthEast	25 x 100	0.1	0.1
	13.2	Brock Research Cntr Rd. SouthWest	25 x 100	0.1	0.1
	13.6	Evan Hewes/Hwy 80 (in R/W)	50 x 100	0.1	0.1
	26.0	Evan Hewes/Hwy 80 (in R/W)	15 x 150	0.1	0.1
	27.2	Between Evan Hewes & I-8	60 x 687	0.9	0.9
	27.3	Between I-8 & Holdridge Rd	60 x 138	0.2	0.2
	27.4	Holdridge Rd. South to Pullback	60 x 442	0.6	0.6
	27.4	East Highline Canal Pullback East Side	150 x 1,100	3.8	3.8

TABLE D-1 (cont'd)

Temporary Extra Workspaces Associated with the North Baja Pipeline Expansion Project

County, State	Milepost	Description	Dimensions (feet)	Acres	Acres of New Disturbance
	28.5	Vanderlinden Road - East & South	50 x 250	0.3	0.3
	29.5	Miller Road - East & South	125 x 125	0.4	0.4
	30.5	Enz Road - East & South	75 x 200	0.3	0.3
	31.5	Bonds Corner Road - West & North	75 x 200	0.3	0.3
	32.0	Schali Road - East & North	50 x 200	0.2	0.2
	32.0	Schali Road - West & North	50 x 200	0.2	0.2
	32.4	Alamo River - East & North	75 x 200	0.3	0.3
	33.2	Towland Road - East & North	50 x 200	0.2	0.2
	33.2	Towland Road - West & North	50 x 200	0.2	0.2
	33.9	Lateral 12 - East & North	75 x 120	0.2	0.2
	33.9	Lateral 12 - West & North	50 x 200	0.2	0.2
	34.2	Holtville Orchard Road - East & North	50 x 200	0.2	0.2
	34.2	Holtville Orchard Road - West & North	50 x 200	0.2	0.2
	34.5	Ash Main Canal - East & North	50 x 200	0.2	0.2
	34.5	Ash Main Canal - West & North	50 x 200	0.2	0.2
	34.9	Mets Road - East & North	50 x 200	0.2	0.2
	34.9	Mets Road - West & South	50 x 200	0.2	0.2
	35.9	Anderholt Road - East & South	75 x 200	0.3	0.3
	36.4	Ash 39/30A Lateral - West & South	75 x 190	0.3	0.3
	36.9	Barbara Worth Road - East & North	75 x 200	0.3	0.3
	38.0	Meloland Road - West & North	75 x 200	0.3	0.3
	38.2	Gate 151 - East & North	50 x 200	0.2	0.2
	38.2	Gate 151 - West & North	50 x 200	0.2	0.2
	38.4	Central Drain 2A - East & North	75 x 200	0.3	0.3
	38.7	Chick Rd at McGrew - NE corner	100 x 100	0.2	0.2
	38.9	Gate 122A - East & South	50 x 200	0.2	0.2
	38.9	Gate 122A - East & North	50 x 200	0.2	0.2
	39.1	I-8 - West & South	75 x 200	0.3	0.3
	39.1	I-8 - East & South	40 x 200	0.2	0.2
	39.1	I-8, Dealwood Road - West & North	75 x 200	0.3	0.3
	39.1	I-8, Dealwood Road - East & North	40 x 200	0.2	0.2
	39.7	E. Ross Road	50 x 400	0.5	0.5
	39.9	Ash Lat. 15 & Central Drain - East & South	50 x 200	0.2	0.2
	39.9	Ash Lat. 15 & Central Drain - West & South	50 x 200	0.2	0.2
	40.4	Bowker Road - East & South	50 x 200	0.2	0.2
	40.4	Bowker Road - West & South	50 x 200	0.2	0.2
	41.9	Acacia Lateral 6A - East & South	50 x 200	0.2	0.2
	41.9	Acacia Lateral 6A - East & North	50 x 200	0.2	0.2
	42.2	E. Gillett Street - East & South	50 x 200	0.2	0.2
	42.2	E. Gillett Street - West & North	50 x 200	0.2	0.2
	42.5	Acacia Lateral 8 - West & South	75 x 200	0.3	0.3
	42.8	Evan Hewes Hwy & Parker Rd - West & South	75 x 250	0.4	0.4
	42.8	Evan Hewes Hwy & Parker Rd - East & South	50 x 200	0.2	0.2
	42.9	Holton Road	50 x 390	0.4	0.4
	43.3	State Highway 111 - East & North	75 x 200	0.3	0.3
	43.4	Old St Hwy 111 - East side of Pipeline	50 x 90	0.1	0.1

TABLE D-1 (cont'd)

Temporary Extra Workspaces Associated with the North Baja Pipeline Expansion Project

County, State	Milepost	Description	Dimensions (feet)			Acres	Acres of New Disturbance
	43.4	Old St Hwy 111 - West side of Pipeline (Triangular)	75	x	160	0.1	0.1
	43.7	Old St Hwy 111 - East side of Pipeline	75	x	200	0.3	0.3
	44.2	Alder Lateral 7 at Cannon Rd - West & North	75	x	200	0.3	0.3
	44.7	Alder Lateral at Cooley Rd - East & North	50	x	200	0.2	0.2
	44.7	Alder Lateral at Cooley Rd - West & South	50	x	200	0.2	0.2
	45.7	N. Dogwood Road	75	x	100	0.2	0.2
	45.7	El Centro Terminus	320	x	280	2.1	2.1
		IID Lateral Total				43.1	43.1
		Total Project				**171.5**	**94.5**

TABLE D-2

Temporary Access Roads for the North Baja Pipeline Expansion Project

County, State	Milepost	Road Number	Type 1[a] (miles)	Type 2[b] (miles)	Type 3[c] (miles)	Total (miles)	Type 1 (acres)	Type 2 (acres)	Type 3 (acres)	Total Acres[d]	Temporary (T)/ Permanent (P)
B-Line											
La Paz, Arizona											
	0.0	LPAZ-01	0.3			0.3	0.9	0.0	0.0	0.9	T
		LPAZ-02	0.5			0.5	1.3	0.0	0.0	1.3	T
Subtotal			**0.8**	**0.0**	**0.0**	**0.8**	**2.2**	**0.0**	**0.0**	**2.2**	
Riverside, California											
	2.2	RICA-01	0.1			0.1	0.2	0.0	0.0	0.2	T
	11.5	RICA-02	1.3	2.1		3.4	3.4	5.6	0.0	9.0	T
	11.9	RICA-03	2.5	1.2		3.7	6.7	3.1	0.0	9.8	T
	15.6	RICA-04	2.1			2.1	5.6	0.0	0.0	5.6	T
	18.3	RICA-05	3.0			3.0	7.9	0.0	0.0	7.9	T
	22.1	RICA-06	0.4			0.4	1.2	0.0	0.0	1.2	T
Subtotal			**9.4**	**3.3**	**0.0**	**12.6**	**25.0**	**8.7**	**0.0**	**33.7**	
Imperial, California											
	22.1	IMCA-01	1.8			1.8	4.7	0.0	0.0	4.7	T
	26.5	IMCA-02	0.7			0.7	1.8	0.0	0.0	1.8	T
	28.1	IMCA-03	0.1			0.1	0.3	0.0	0.0	0.3	P[e]
	28.2	IMCA-04	0.4			0.4	1.1	0.0	0.0	1.1	T
	29.1A	IMCA 2001	0.2			0.2	0.5	0.0	0.0	0.5	T
	29.6A	IMCA 2002		0.6		0.6	0.0	1.6	0.0	1.6	T
	29.9A	IMCA 2003	0.6			0.6	1.6	0.0	0.0	1.6	T
	30.7A	IMCA 2004		0.1		0.1	0.0	0.3	0.0	0.3	T
	31.0A	IMCA 2005		0.1		0.1	0.0	0.3	0.0	0.3	T
	31.2A	IMCA 2006		0.8		0.8	0.0	2.1	0.0	2.1	T
	32.1A	IMCA 2007		0.3		0.3	0.0	0.8	0.0	0.8	T
	32.1	IMCA 2008	0.2			0.2	0.5	0.0	0.0	0.5	T
	33.2	IMCA-09	0.2			0.2	0.6	0.0	0.0	0.6	T
	35.0	IMCA-10	0.2			0.2	0.4	0.0	0.0	0.4	T
	35.8	IMCA 1002		0.6		0.6	0.0	1.5	0.0	1.5	T
	36.5A	IMCA 1003		0.2		0.2	0.0	0.5	0.0	0.5	T
	36.9A	IMCA 1004		0.1		0.1	0.0	0.3	0.0	0.3	T
	37.1A	IMCA 1005		0.1	0.0	0.1	0.0	0.3	0.0	0.3	T
	37.7A	IMCA 1006		0.1		0.1	0.0	0.3	0.0	0.3	T
	38.0A	IMCA 1007		0.1		0.1	0.0	0.3	0.0	0.3	T

TABLE D-2 (cont'd)

Temporary Access Roads for the North Baja Pipeline Expansion Project

County, State	Milepost	Road Number	Type 1 [a] (miles)	Type 2 [b] (miles)	Type 3 [c] (miles)	Total (miles)	Type 1 (acres)	Type 2 (acres)	Type 3 (acres)	Total Acres [d]	Temporary (T)/ Permanent (P)
	38.2A	IMCA 1008		0.1		0.1	0.0	0.3	0.0	0.3	T
	39.0A	IMCA 1009		0.2		0.2	0.0	0.5	0.0	0.5	T
	39.9A	IMCA 1010		0.1		0.1	0.0	0.3	0.0	0.3	T
	40.2A	IMCA 1011		0.1		0.1	0.0	0.4	0.0	0.4	T
	40.9A	IMCA 1012		0.3		0.3	0.0	0.8	0.0	0.8	T
	41.6	IMCA 1014	0.1			0.1	0.3	0.0	0.0	0.3	P [f]
	41.8A	IMCA 1015		0.1		0.1	0.0	0.3	0.0	0.3	T
	42.5A	IMCA 1016		0.2		0.2	0.0	0.5	0.0	0.5	T
	43.0A	IMCA 1018		0.1		0.1	0.0	0.3	0.0	0.3	T
	43.6A	IMCA 1019		0.1		0.1	0.0	0.3	0.0	0.3	T
	43.9A	IMCA 1021		0.1		0.1	0.0	0.3	0.0	0.3	T
	44.1A	IMCA 1023		0.1		0.1	0.0	0.3	0.0	0.3	T
	44.2A	IMCA 1024		0.1		0.1	0.0	0.3	0.0	0.3	T
	44.5A	IMCA 1025		0.1		0.1	0.0	0.3	0.0	0.3	T
	44.8A	IMCA 1026		0.2		0.2	0.0	0.5	0.0	0.5	T
	45.2A	IMCA 1028		0.1		0.1	0.0	0.3	0.0	0.3	T
	45.5A	IMCA 1029		0.1		0.1	0.0	0.3	0.0	0.3	T
	45.7A	IMCA 1030		0.1		0.1	0.0	0.3	0.0	0.3	T
	45.9A	IMCA 1031		0.1		0.1	0.0	0.3	0.0	0.3	T
	46.2A	IMCA 1033		0.1		0.1	0.0	0.3	0.0	0.3	T
	46.5A	IMCA 1034		0.1		0.1	0.0	0.3	0.0	0.3	T
	46.7A	IMCA 1035		0.1		0.1	0.0	0.3	0.0	0.3	T
	46.9A	IMCA 1036		0.1		0.1	0.0	0.3	0.0	0.3	T
	47.0A	IMCA 1037		0.1		0.1	0.0	0.3	0.0	0.3	T
	47.6A	IMCA 1038		0.1		0.1	0.0	0.3	0.0	0.3	T
	48.0A	IMCA 1039		0.5		0.5	0.0	1.3	0.0	1.3	T
	49.0	IMCA-17	0.2			0.2	0.6	0.0	0.0	0.6	T
	54.4	IMCA-18	0.3	0.2		0.5	0.8	0.5	0.0	1.4	T

TABLE D-2 (cont'd)

Temporary Access Roads for the North Baja Pipeline Expansion Project

County, State	Milepost	Road Number	Type 1 [a] (miles)	Type 2 [b] (miles)	Type 3 [c] (miles)	Total (miles)	Type 1 (acres)	Type 2 (acres)	Type 3 (acres)	Total Acres [d]	Temporary (T)/ Permanent (P)
	55.0	IMCA-19		0.1		0.1	0.0	0.3	0.0	0.3	T
	60.3	IMCA-20	0.1			0.1	0.3	0.0	0.0	0.3	P [g]
	62.4	IMCA-21	1.1			1.1	3.0	0.0	0.0	3.0	T
	64.9 & 66.5	IMCA-22	2.4			2.4	6.5	0.0	0.0	6.5	T
	66.5	IMCA-23	0.2			0.2	0.6	0.0	0.0	0.6	T
	68.9	IMCA-24		0.0		0.0	0.0	0.0	0.0	0.0	T
	70.9	IMCA-25	0.0			0.0	0.1	0.0	0.0	0.1	T
	72.9	IMCA-26		0.0		0.0	0.0	0.1	0.0	0.1	T
	75.2	IMCA-27		0.3	0.1	0.4	0.0	0.8	0.2	1.0	T/P
	76.8	IMCA-28	3.3			3.3	8.7	0.0	0.0	8.7	T
	79.3	IMCA-29		1.9		1.9	0.0	5.1	0.0	5.1	T
	79.8	IMCA-30	1.7	1.2		2.9	4.5	3.1	0.0	7.6	T
Subtotal			**13.8**	**10.2**	**0.1**	**24.1**	**36.7**	**27.2**	**0.2**	**64.2**	
B-Line Total			**24.0**	**13.5**	**0.1**	**37.5**	**63.9**	**35.9**	**0.2**	**100.0**	
BEI Lateral											
	0.0	RICA-31			0.1	0.1	0.0	0.0	0.1	0.1	P
BEI Lateral Total					**0.1**	**0.1**	**0.0**	**0.0**	**0.1**	**0.1**	
IID Lateral											
Imperial, California											
	0.0	IMCA-01			0.0	0.0	0.0	0.0	0.1	0.1	P
	0.2	IMCA-02	0.1			0.1	0.3	0.0	0.0	0.3	T
	5.6	IMCA-04		0.1		0.1	0.0	0.2	0.0	0.2	T
	7.6	IMCA-05	0.1	0.1		0.2	0.3	0.3	0.0	0.6	P
	7.8	IMCA-06		0.2		0.2	0.0	0.6	0.0	0.6	T
	8.0	IMCA-07	0.5			0.5	1.4	0.0	0.0	1.4	P
	8.2	IMCA-08			0.0	0.0	0.0	0.0	0.0	0.0	T
	14.0	IMCA-09			0.0	0.0	0.0	0.0	0.0	0.0	T
	14.5	IMCA-10			0.0	0.0	0.0	0.0	0.0	0.0	T
	15.0	IMCA-11			0.0	0.0	0.0	0.0	0.0	0.0	T
	15.5	IMCA-12			0.0	0.0	0.0	0.0	0.0	0.0	T
	15.9	IMCA-13			0.0	0.0	0.0	0.0	0.0	0.0	T
	16.2	IMCA-14	0.0			0.0	0.0	0.0	0.0	0.0	T
	27.3	IMCA-15	0.1			0.1	0.2	0.0	0.0	0.2	T
	27.4	IMCA-16	0.1			0.1	0.2	0.0	0.0	0.2	T
	27.6	IMCA-17	0.2			0.2	0.4	0.0	0.0	0.4	T
	27.8	IMCA-18	0.2			0.2	0.6	0.0	0.0	0.6	T
	39.2	IMCA-19		0.5		0.5	0.0	1.4	0.0	1.4	T
	43.7	IMCA-20		0.5		0.5	0.0	1.3	0.0	1.3	T
	44.2	IMCA-21	0.4			0.4	1.1	0.0	0.0	1.1	T
	44.2	IMCA-22		0.5		0.5	0.0	1.3	0.0	1.3	T
	44.6	IMCA-23	0.5			0.5	1.3	0.0	0.0	1.3	T
IID Lateral Total			**2.2**	**1.9**	**0.1**	**4.2**	**5.9**	**5.1**	**0.2**	**11.2**	
Total Project			26.2	15.4	0.2	41.8	69.8	41.0	0.5	111.2	

TABLE D-2 (cont'd)

Temporary Access Roads for the North Baja Pipeline Expansion Project

County, State	Milepost	Road Number	Type 1[a] (miles)	Type 2[b] (miles)	Type 3[c] (miles)	Total (miles)	Type 1 (acres)	Type 2 (acres)	Type 3 (acres)	Total Acres[d]	Temporary (T)/ Permanent (P)

---

[a] Existing road that needs no improvement.

[b] Existing road that needs some improvement or modification.

[c] New access road.

[d] Access roads are assumed to be 22 feet wide.

[e] Existing access road to valve #5.

[f] Existing access road to valve #6.

[g] Existing access road to valve #7.

TABLE D-3

Temporary Extra Workspaces for the Arrowhead Alternative

Temporary Extra Workspace ID	Location	Dimensions (feet)	Acres
AH-1	Northeast Corner Seeley and Arrowhead	100 x 200	0.5
AH-2	East Side of C-05 Canal Crossing	143 x 227 x 50	0.4
AH-3	West Side of C-05 Canal Crossing	170 x 247 x 50	0.5
AH-4	Southeast Corner 14th and Arrowhead	75 x 200	0.3
Total Temporary Disturbance			**1.7**

APPENDIX E

CONSTRUCTION MITIGATION AND RESTORATION PLAN

TransCanada
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North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix E
Construction Mitigation and Restoration Plan

Prepared by

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May 2006

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Appendix E

Construction Mitigation and Restoration Plan

1.0 INTRODUCTION

This Construction Mitigation and Restoration Plan (CM&R Plan) describes measures to be taken by North Baja Pipeline, LLC (North Baja) to protect natural resources during construction and operation of the North Baja Pipeline Expansion Project (Project). The CM&R Plan consists of three parts:

- Section 2 describes procedures that were used successfully for the A-Line construction mitigation and restoration and will be used again for the Project, including the B-Line and the IID Lateral, to preserve and restore habitat values temporarily impacted by pipeline construction in the desert environment.
- Section 3 proposes modifications to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan, as updated January 2003 (FERC Plan), that are relevant to the Project area and are designed to minimize Project-related construction impacts on soils and minimize erosion.[1]
- Section 4 proposes modifications to the FERC's Wetland and Waterbody Construction and Mitigation Procedures, as updated January 2003 (FERC Procedures), that are relevant to the Project area and are designed to minimize Project-related disturbance to waterbodies and wetlands.[2]

In addition to the CM&R Plan presented here, North Baja is providing the following additional plans directly relevant to construction mitigation and restoration:

- Appendix G – Horizontal Directional Drilling Plan, which contains specific procedures to be used during the horizontal directional drilling of the Colorado River, the All-American Canal (AAC), and the East Highline Canal;
- Appendix F – Spill Prevention, Containment, And Control Plan For Hazardous Materials And Hazardous Wastes (SPCC Plan);
- Appendix P – Off-Highway Vehicle (OHV) Management Plan, which contains site-specific measures for controlling OHV route proliferation attributable to Project construction; and
- Appendix L – Dust Control Plan, which contains measures designed to minimize air pollution or wind erosion from fugitive dust attributable to construction activities.

An updated CM&R Plan will be submitted prior to construction if necessary to incorporate any additional applicable requirements of Federal, State, and local permits.

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[1] The FERC's Plan can be viewed on the FERC Internet website at http://www.ferc.gov/industries/gas/enviro/uplndctl.pdf.

[2] The FERC's Procedures can be viewed on the FERC Internet website at http://www.ferc.gov/industries/gas/enviro/wetland.pdf.

2.0 DESERT RESTORATION PLAN

North Baja researched desert restoration techniques and produced a desert restoration plan for the original North Baja Pipeline Project. That plan provided the scientific rationale for the restoration approach, which differs from conventional methods due to the extreme aridity of the Project area. It included a literature review on natural vegetation recovery and revegetation parameters. It also provided an in-depth review of the Colorado Desert setting, including detailed descriptions of cover types.

The results of the desert restoration plan for the A-Line have been relatively rapid natural revegetation along most of the pipeline right-of-way, no spread of noxious weeds due to construction or operation of the pipeline, and limited expansion of OHV routes due to pipeline construction. These results have been documented in annual reports, filed with the FERC and other agencies, detailing the surveys conducted for weed spread and revegetation success. Annual evaluations and reports for the weed and revegetation surveys will continue through 2012 as agreed for the original North Baja Pipeline Project.

As part of the A-Line restoration plan, an experimental seeding program was instituted. That program is detailed in Attachment A of the North Baja CM&R Plan used for construction of the A-Line, and has also resulted in annual reports filed with FERC and other agencies. After 3 years of monitoring, the plots show that seeding in the desert is generally ineffective in improving the rate or extent of revegetation. A possible exception is in desert wash woodlands, where a high rate of seeding has shown a somewhat increased number of individual woodland tree species seedlings. Annual evaluations and reports for the experimental seeding Project will continue until construction of the B-line, providing an estimated 7 years of results to inform future restoration efforts in the Colorado Desert.

2.1 NORTH BAJA REVEGETATION AND WEED MONITORING PROGRAM

The October 2004 and March 2005 surveys conducted 26 and 32 months, respectively, after final surface restoration completion showed increased natural regeneration, both in the desert wash woodland habitat and in creosote scrub habitat, compared to off-right-of-way areas (Tetra Tech 2005). Native species of annuals and shrubs have readily recruited onto the right-of-way with each annual species increasing in occurrence within plots with each passing year. The control plots, on the other hand, generally show no increase in occurrence of each species over time.

In October 2004, native shrubs *Larrea tridantata*, *Atriplex canescens*, and *Ambrosia dumosa* were the most common plants and occurred in 30, 14, and 2 percent of the right-of-way plots, respectively. These same shrubs occurred in 23, 2, and 12 percent of the plots in March 2005. *Encelia farinosa*, a native shrub, was present in 4 percent of the plots in 2004 and increased to 14 percent in 2005. One species of tree, *Psorothamnus spinosa*, (smoke tree) was found within a right-of-way plot in October 2004, although other tree recruitment was noted on the right-of-way but outside of plot locations. In March 2005, both *Psorothamnus spinosa* and *Cercidium floridum* (blue palo verde) seedlings were found in the plots and again tree recruitment was evident along the right-of-way outside of plot locations. Tree and shrub recruitment within the right-of-way was noticeably greater within desert wash habitat compared to creosote scrub habitat.

Based on the first 3 years of survey, the right-of-way appears to be revegetating successfully, not only with annuals in season, but also with the perennial shrubs and trees that will eventually become the dominant vegetation. Revegetation success has been high for annuals this year, but also for perennials. The very harsh Colorado desert climate will probably continue to restrict cover and growth of all species.

Noxious weed species have not spread outside areas containing weeds prior to construction. From a qualitative perspective, *Brassica tournefortii* was generally present in equal numbers in disturbed right-of-way areas and in adjacent, less-disturbed desert pavement areas; however, no *B. tournefortii* was observed within any sample plots during October 2004, which is due to its spring flowering followed by summer and fall die off. *Brassica tournefortii* was present in 33 percent of the plots in March 2005, although its distribution was patchy and not concentrated in any particular areas. The right-of-way is also experiencing minor recruitment of *Tamarix ramosissima*, although this weed species has constantly remained below 9 percent abundance among all sample plots since post-construction monitoring and is present only in areas of prior tamarisk infestation.

The use of the sheepsfoot to create mini-catchment areas appears to encourage the sprouting of annuals in most areas, especially when the mini-catchments are located in low-lying or wash areas; however, many plots lacking topographical relief or located in desert pavement do not show a clear difference between regeneration inside and outside of the mini-catchments.

Annuals typically dominate numerically and by percent cover, especially during the prolific bloom observed in March 2005, which is attributed to extremely high precipitation. Many seedling native shrubs have also recruited and are steadily increasing in percent cover. It should also be noted that in areas with desert pavement there was noticeably more recruitment of annuals within the right-of-way compared to intact desert pavement sites located off the right-of-way. In addition, off-right-of-way areas appeared to follow the same pattern of higher shrub recruitment in wash areas than in creosote bush scrub and desert pavement habitats. Last, although not quantified, shrub recruitment within the right-of-way, but outside sample plot areas was generally higher than off-right-of-way areas, indicating that native shrub seedlings recruit more readily to recently impacted areas.

2.2 RESTORATION GOALS

Typical of arid habitats, the natural revegetation processes in the Colorado Desert are relatively protracted. Impacts on the landscape take long periods to restore to their original forms. In addition to the intrinsic value of the desert landscape, the Colorado Desert supports a number of special-status plants and animals. The goals of this plan will be to:

- Avoid impacts where practical;
- Where impacts are unavoidable, minimize impacts; and
- Focus on site preparation to facilitate natural processes of revegetation.

North Baja proposes to continue its adaptive management approach that incorporates many different “tools” that may be used on a site-specific basis. These tools include:

- Emphasize final site preparation to encourage natural revegetation;

- Avoid (i.e., preserve), where practical, mature native trees;
- Stipulate a maximum construction corridor width;
- Reserve topsoil and plant materials from the right-of-way before grading, and respread over the right-of-way after construction is complete;
- Grubbing and crushing vegetation where possible along the construction corridor, rather than blading;
- Salvaging large woody debris to later be spread on the restored corridor to serve a dual purpose: blocking OHV access to the pipeline corridor and serve as a mulch and source of shade to nurse plant germination and growth;
- Imprint the restored right-of-way to provide indentations to catch seed and water;
- Implement best management practices to protect the soil;
- Apply restoration methods that have been shown to work in the desert environment;
- Prevent the construction- or operation-related spread of noxious weeds or other undesirable species;
- Apply methods to discourage unauthorized OHV use of the pipeline right-of-way, including construction of berms, placement of natural materials, and transplanting of cactus and ocotillo; and
- Avoid removing desert trees where practical by reducing the width of the right-of-way.

2.3 PLAN IMPLEMENTATION

2.3.1 Preconstruction Phase

2.3.1.1 Identification of Native Tree Areas

Mature, native trees are particularly valuable and important in desert ecosystems. Target native plants include the tree forms of the following species: desert willow, cat's claw acacia, Palo Verde, desert ironwood, mesquite, smoke tree, and ocotillo. A field survey was conducted in October 2001 to identify areas of native tree concentrations where reducing right-of-way width would preserve significant quantities of trees. Subsequent surveys in 2005 of the BEI Lateral and IID Lateral revealed no desert washes and no microphyll woodlands on those routes. Therefore, the microphyll woodland area identification conducted for the A-Line is the only needed guide to locations where B-Line right-of-way width reductions will occur.

Areas that can be reasonably preserved from impact are those designated as the passing lanes. While work can proceed on the pipeline without the use of the passing lanes, it is much slower and more expensive and is not feasible for extended distances. Topsoil will have to be hauled off the right-of-way and stored, along with the woody vegetative debris, then returned to the area and respread. Spoil from the trenching operation will be spread along the working area, then replaced in the trench after the padding operation is complete.

During in-field surveys of the proposed neck-down areas, it was determined that measuring a percent crown cover for the passing lane along the entire route provided an accurate description of trees lost (or preserved) in the area and the relative value of the multi-stemmed desert wash woodland species. Given that desert vegetation is sparse at best, North Baja determined that where at least 20 percent crown cover was found in the proposed 30-foot-wide area, construction corridor width should be limited. Table E-1 shows the location and extent of the areas where the right-of-way width was planned for reduction or "necking down" for the A-Line. In several locations, neck-down areas were modified in the field by variances approved by the agencies prior to construction. In these areas, the A-Line was restricted to 50-foot width. For B-Line construction, right-of-way width will be reduced 25 feet from the standard 105 feet to 80 feet in the same locations that were necked down during A-Line construction.

Table E-1: Locations Where the Proposed Construction Right-of-Way Will be Reduced to Minimize Tree Clearing

Starting Milepost	Length (feet)	Crown Cover (%)	A-Line Acres Disturbed	B-Line Additional Acres Disturbed
B-Line — 105 feet to 80 feet				
16.9	345	25	0.4	0.2
17.9	270	31	0.3	0.2
20.0	700	30	0.8	0.5
22.3	480	20	0.6	0.3
22.5	250	43	0.3	0.2
22.6	1,000	33	1.1	0.7
22.8	180	42	0.2	0.1
23.3	340	50	0.4	0.2
23.4	250	63	0.3	0.2
23.5	590	41	0.7	0.4
25.8	850	35	1.0	0.6
34.5	860	25	1.0	0.6
45.1	500	48	0.6	0.3
51.1	1,800	30	2.1	1.2
51.7	1,100	30	1.3	0.8
64.5	500	31	0.6	0.3
Total	**10,015**		**11.7**	**6.8**

Without right-of-way reduction, the acreage of desert wash woodland represented in these areas equals 24.1 acres. The proposed narrowing would preserve 5.6 acres and leave 18.5 acres still impacted. The remaining acres of desert wash woodland are in areas so scattered and with so few trees that the impact of right-of-way reduction would be small compared to the significant increase in cost. The right-of-way width reduction in these areas would preserve the densest, and therefore most productive, areas of desert wash woodland within the originally proposed footprint of the pipeline construction.

2.3.1.2 Construction Work Area Restrictions

Measures will be taken to minimize permanent and temporary construction disturbances to facilitate subsequent restoration. Construction will stay within designated construction work areas.

Designated Construction Zone – Project-related vehicle traffic, construction activity, and equipment storage will be restricted to established roads, designated access roads, the working strip, storage areas, staging and parking areas, and other designated Project areas. This restriction includes the placement of portable toilet facilities.

Staking – The outside boundaries of the construction corridor will be staked prior to construction with approximately 24-inch-tall flagged or painted stakes at a maximum interval of 300 feet.

Storage, Laydown, and Spoil Disposal Areas – To minimize permanent and temporary construction disturbances, storage facilities will be located at sites that have non-native cover or have been previously disturbed. Parking, storage, and other areas will be marked by flagged lath stakes about 24 inches above ground and placed in line of sight with a maximum spacing of 300 feet.

2.3.1.3 OHV Route Proliferation Limitation

Please see Appendix P, OHV Management Plan for details of the OHV route management plan.

2.3.1.4 Salvage Cactus, Ocotillo, and Other Woody Vegetation

Immediately prior to ground-disturbing activities at designated crossing areas defined in Appendix P, identified specimens of the larger species of cactus (primarily *Opuntia*), ocotillo (*Fouquieria splendens*), and other woody vegetation will be salvaged from the nearby right-of-way, stored, and then replanted after pipeline installation. These specimens will be used for OHV route control.

2.3.2 Construction Phase – Clearing

2.3.2.1 Non-Native Cover Types

For tamarisk scrub (MPs 29-33, B-Line only), restoration objectives during the initial ground clearance and right-of-way preparation will be:

Prevent Spread of Noxious Weeds –Soil and plant materials from non-native areas will be disposed of in non-native areas only. That is, no disposal or transfer of excess spoils or cleared-and-grubbed plant materials into native cover type areas will be allowed. All equipment will be washed and inspected prior to use on the right-of-way, including in tamarisk areas. See section on washing equipment in Native Habitat Areas, below.

Disposal methods for tamarisk removed during the clearing of portions of large monotypic tamarisk stands include hauling or burning on site. If burning is the selected measure, North Baja will apply for the appropriate burning permits. If hauling is selected, loads will be covered to prevent windborne dispersal of propagules. After the removal of all tamarisk from the right-of-way, no further equipment or truck washing will be needed or utilized.

Trucks and equipment used to remove tamarisk will be washed prior to their use elsewhere on the right-of-way. All washing will be conducted at commercial truck washes in nearby communities, and trucks and equipment will be inspected prior to use elsewhere on the right-of-way.

Restore Hydrology – Where hydrologic features are present, the original surface hydrology will be restored (see Section 4).

2.3.2.2 Native Cover Types

For the three native cover types, restoration objectives during the initial ground clearance and right-of-way preparation are:

Prevent Spread of Noxious Weeds – Disposal of soil and plant materials from non-native areas will not be allowed in native areas. That is, no disposal or transfer for excess spoils or plant materials from non-native areas will be allowed into native cover type areas.

The construction right-of-way is surveyed annually for plants listed as invasive exotics by the State of California, as well as other species on the BLM National List of Invasive Weed Species of Concern, as a right-of-way grant condition for the A-Line. This survey has shown no spread of weeds since construction of the A-Line. Based on weed surveys conducted for the A-Line and follow-up surveys conducted annually thereafter, the only infested area is the tamarisk infestation from MPs 29 through 33 on the B-Line. While other non-native species are present on the right-of-way, including African mustard and *Schismus*, they are ubiquitous in the wider desert area, including but not limited to the present right-of-way and the proposed construction area, and equipment washing will not impact their distribution. Weed control will, therefore, focus only on tamarisk.

Once the construction corridor has been cleared and graded, vehicles can travel the right-of-way through non-native areas without significant risk of spreading noxious plant material.

Non-native tamarisk trees will be removed from the right-of-way in native areas to discourage colonization of the right-of-way after construction. If possible, removal should occur prior to the set of seeds to reduce the risk of dispersal. Tamarisk small enough to be pulled out by hand will be removed when found. Larger specimens will be mechanically removed during Project construction. All identified tamarisk will be removed by the end of Project construction. Tamarisk will be disposed of in a manner that prevents the spread of seed. The preferred methods of disposal of tamarisk found in relatively isolated locations include hauling off or burning on site. Methods for each area will be specified in the Plan of Development (POD). Where burning is the selected measure, North Baja will apply for the appropriate burning permits. If hauling is selected, loads will be covered to prevent windborne dispersal of propagules.

Weed Wash Stations: No temporary weed wash stations were employed during construction of the A-Line. No temporary weed wash stations are proposed for the construction of the Project. However, weed control continues to be an important concern for North Baja, and the following weed-control measures will apply.

All construction equipment must be washed prior to entering the construction area for the first time for any part of the Project to prevent the spread of invasive weeds from other areas. The initial washing will be conducted at commercial truck washes in nearby communities, including Blythe, El Centro, or Yuma, and use of clean equipment will be a contractual condition for the construction contractor and all subcontractors. The Environmental Inspector will ensure that all trucks and equipment that will be utilized on an unpaved portion of the construction right-of-way have been washed prior to first use, and that there is no dirt or plant material clinging to the wheels, tracks, or understructure of any truck or equipment.

Preserve Native Trees – Impacts on native trees concentrations will be minimized in the areas specified in Table E-1, above, by limiting the construction right-of-way width to 80 feet.

Restrict Area of Disturbance – The width of the right-of-way will be restricted to minimize impacts on native areas. The standard right-of-way width will be 105 feet. In constrained areas with steep slopes, the width may be widened to accommodate equipment for limited stretches. Conversely, in specified areas, above, the right-of-way width will be restricted to 80 feet for limited stretches to avoid trees. Only the working strip, public roads, or approved routes of travel will be used. Off-road traffic outside designated areas will be prohibited to protect adjacent native habitat. All Project vehicles will turn around only within approved work areas or on designated access roads.

Preservation of the Seed Bank – The upper two to eight inches of topsoil from the portions of the right-of-way requiring grading will be removed first (see also Section 3.4.2, below). Topsoil will be stockpiled separately from the spoil pile. Topsoil will be temporarily stockpiled in windrows, which will be flagged to clearly identify them. These stockpiles of topsoil will be carefully segregated from the subsoil. Topsoil will be stockpiled under normal circumstances from 2 to 4 weeks, but not longer than 4 months.

The topsoil will be evenly respread over the graded area during cleanup. Reserving and respreading topsoil is designed to conserve the seed bank, aiding in natural revegetation. Imprinting will be used to provide micro-catchment areas for water retention and seed germination. Imprinting may be accomplished through the use of a "sheep's-foot" roller or other methods.

Encourage Regeneration of Woody Plants – Areas that must be scraped or graded will be restricted to that necessary to create a safe working area for construction. Naturally level areas, for example, may require no grading. In areas requiring no grading, grubbing of the right-of-way in native habitat areas will leave the underground roots of woody plants intact. That is, the grubbing will skim the surface of the ground to crush or slice off the aboveground portions of vegetation, leaving the root crowns intact. This will allow for rapid regeneration of woody plant species.

Native plant material that has been grubbed from the right-of-way will be respread on the right-of-way after pipeline installation, providing a mulch to trap seeds, shade seedlings, and conserve water for the revegetation of the right-of-way. In areas where topsoil is removed, the plant material will be respread with the topsoil.

Restore Hydrology – Where hydrologic features are present, the original surface hydrology will be restored. See Section 4, below.

Prevent Impacts on Migratory Birds – North Baja plans to conduct construction in native habitats outside the breeding season for migratory birds. If construction activities are necessary during bird breeding season, vegetation that could provide nesting substrate will be removed from the right-of-way before breeding season, thus eliminating the possibility that birds could nest on the right-of-way. Qualified biologists will conduct pre-construction surveys to confirm the absence of nesting birds before construction begins.

If, in spite of vegetation removal, nesting birds are found on the construction right-of-way, the nest will not be removed until fledging has occurred or unless authorized after consultation with USFWS, CDFG, and, if the nest is located on Federal lands, the Federal land management agency.

2.3.3 Construction Phase – Cleanup

Once the pipeline has been installed and the pipeline trench backfilled, the right-of-way will be recontoured to approximate original contours. Recontouring to natural lines and grade will be accomplished without disruption to adjacent undisturbed habitat.

After topsoil and native plant material have been respread over the graded areas at the completion of construction, these areas will be imprinted with a sheep's-foot or similar device. The indentations created by the imprinter catch seed and water, aiding in the natural revegetation of the site. Native plant material that had been removed from the right-of-way will provide a mulch to trap seeds, shade seedlings, and conserve water for the revegetation of the right-of-way.

2.4 POSTCONSTRUCTION

Postconstruction monitoring and maintenance of the pipeline right-of-way will be according to the overall Project plan (see Sections 2.5 and 3.7, below). Of particular relevance will be monitoring of erosion and repairs to maintain the integrity of the line.

2.5 SURVEY, MONITORING, AND REPORTING

Surveys will be conducted for non-native invasive plant species after construction is complete. They will be compared to the preconstruction survey conducted to determine locations of weed infestations attributable to this Project, including the B-Line, IID Lateral, and BEI Lateral. North Baja will be responsible for weed survey and control two times a year for the first 2 years, then once a year thereafter as part of its routine maintenance and operation of the pipeline. The first survey after construction will be conducted after rainfall and will consist of walking the entire line, looking for new weed infestations. Thereafter, surveys may be conducted aerially with spot ground checks in areas of infestations. Weed control will be done at the same time as the survey, since tamarisk, the most likely invader, can be most efficiently controlled by hand-pulling, bagging, and disposing of in approved sites.

The entire line will also be monitored for success of restoration of desert vegetation in addition to the routine monitoring specified in Section 3.7, below. Postconstruction monitoring will be conducted annually in areas of desert vegetation disturbed by construction through 2012. Results of the monitoring will be provided in full reports to the FERC, BLM, CSLC, BOR, FWS, and CDFG as originally agreed for the A-Line construction.

If, after 5 years of monitoring where rainfalls have been at least average for the area, revegetation of the construction work area in native desert habitats is determined to be unsuccessful, North Baja will consult with FERC, BLM, CSLC, BOR, FWS, and CDFG and develop a remedial restoration plan for desert revegetation. The remedial plan will be based upon assessments of the extent of the failure, the reasons for the failure, and conditions on the right-of-way, such as whether a viable seed source still exists in the soil. It is very unlikely that a remedial plan would include irrigation, which is impracticable in most settings along the pipeline. Options may include selective re-scarification of the surface, with or without supplemental seeding, or allowing more time for natural regeneration to occur. For each year that rainfall amounts have been less than 80 percent of average after 1 drought year subsequent to construction, an additional year shall be granted beyond the initial 5 years for native vegetation to establish before North Baja would be obliged to examine remedial measures.

3.0 UPLAND EROSION AND SEDIMENT CONTROL (FERC UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN, MODIFIED)

3.1 APPLICABILITY (FERC PLAN SECTION I., MODIFIED)

As outlined below, North Baja is proposing modifications to the FERC Plan. This section will apply to all nonwetland areas of the Project. Wetland and waterbody systems are addressed in Section 4.

Deviations that involve measures different from those contained in this section of the CM&R Plan will only be permitted as certificated by the Commission or by written approval of the Director of the Office of Energy Projects (OEP), or his/her designee, unless specifically required in writing by another Federal, State, or Native American land management agency for the portion of the Project on its land. North Baja will file other agency requirements with the Secretary of the Commission (Secretary) before construction.

3.2 SUPERVISION AND INSPECTION

3.2.1 Environmental Inspection (FERC Plan Section II.A., Modified)

1. At least two Environmental Inspectors are required for each construction spread during active construction or restoration. The number and experience of Environmental Inspectors assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected.
2. Environmental Inspectors shall have peer status with all other activity inspectors.
3. Environmental Inspectors shall have the authority to stop activities that violate the environmental conditions of the FERC Certificate, State and Federal environmental permit conditions or landowner requirements and to order corrective action.

3.2.2 Responsibilities of Environmental Inspectors (FERC Plan Section II.B., Modified)

At a minimum, the Environmental Inspector(s) shall be responsible for:

1. Ensuring compliance with the requirements of this CM&R Plan, the environmental conditions of the FERC Certificate authorization, the mitigation measures proposed by North Baja in its application submitted to FERC, other environmental permits and approvals, and environmental requirements in landowner easement agreements;
2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;

3. Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before clearing;
4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;
5. Identifying erosion/sediment control and soil stabilization needs in all areas;
6. Locating dewatering structures and slope breakers to ensure they will not direct water into known cultural resources sites or locations of sensitive species;
7. Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland or waterbody or cause scouring as a result of excessive water volumes and/or pump velocities. If such deposition or scouring is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to prevent recurrence of the relevant problem;
8. Testing subsoil and topsoil in agricultural and residential areas to measure compaction and determine the need for corrective action;
9. Advising the Chief Inspector when conditions (such as wet weather) make it advisable to restrict construction activities in agricultural areas;
10. Ensuring restoration of contours and topsoil;
11. Verifying that the soils imported for agricultural or residential use have been certified as free of noxious weeds and soil pests;
12. Determining the need for and ensuring that temporary erosion controls are properly installed as necessary to prevent sediment flow into Rannells Drain and/or as required by regulatory agencies;
13. Inspecting and ensuring the maintenance of temporary erosion control measures at Rannells Drain least:
    a. on a daily basis in areas of active construction or equipment operation;
    b. on a weekly basis in areas with no construction or equipment operation; and
    c. within 24 hours of each 0.5 inch of rainfall;
14. Ensuring the repair of all ineffective temporary erosion control measures at Rannells Drain within 24 hours of identification;
15. Keeping records of compliance with the environmental conditions of the FERC Certificate, and the mitigation measures proposed by North Baja in the application submitted to the FERC and other Federal and State environmental permits during active construction and restoration; and
16. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase. Implementation of this program may be transferred to the company's operating section upon completion of construction and restoration activities.

3.3 PRECONSTRUCTION PLANNING

North Baja will complete the following before construction:

3.3.1 Construction Work Areas (FERC Plan Section III.A., Modified)

North Baja will identify all construction work areas (e.g. construction rights-of-way, extra workspace areas, pipe storage and contractor yards, borrow and disposal areas, access roads, etc.) that are needed for safe construction. North Baja has ensured that appropriate cultural resources and biological surveys were conducted and that the extent of those surveys was sufficient to accommodate possible future need for activities outside the certificated work areas.

3.3.2 Drain Tile and Irrigation Systems (FERC Plan Section III.B., Modified)

1. Attempt to locate existing irrigation systems.
2. Develop procedures for maintaining irrigation systems during construction, and repairing irrigation systems after construction.

3.3.3 Grazing Deferment (FERC Plan Section III.C., Modified)

There are no grazing areas that would require grazing deferments along the Project. Therefore, this section does not apply.

3.3.4 Road Crossings and Access Points (FERC Plan Section III.D.)

North Baja has planned for safe and accessible conditions at all roadway crossings and access points during construction and restoration.

3.3.5 Disposal Planning (FERC Plan Section III.E.)

North Baja has determined methods and locations for the disposal of brush and excess rock. Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and mitigation requirements.

3.3.6 Agency Coordination (FERC Plan Section III.F., Modified)

North Baja will coordinate with the appropriate local, State, and Federal agencies as outlined in this section and in the Certificate.

1. Obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control. North Baja has completed consultation on desert restoration techniques and incorporates the results in Section 2, above. Incorporate all agreed-

upon recommendations into the CM&R Plan, and on alignment sheets, if required (FERC Plan Section III.F.1., modified).

2. Develop specific procedures in coordination with the appropriate agency to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and restoration activities. At a minimum, North Baja will wash all equipment transferred from Arizona to California at the washing station in Ehrenberg to ensure that equipment arriving on site in California is clean and will wash down clearing and grading equipment before moving equipment from non-native into native vegetation areas as outlined in Section 2 of this CM&R Plan (FERC Plan Section III.F.2., modified).

3.3.7 Stormwater Pollution Prevention Plan (FERC Plan Section III.G., Modified)

North Baja will make available on each construction spread the Stormwater Pollution Prevention Plans (SWPPPs) that would be prepared in accordance with the requirements of the Arizona Department of Environmental Quality, Division of Water Quality and the California Regional Water Quality Control Board, Colorado River Basin Region.

3.4 INSTALLATION

3.4.1 Approved Areas of Disturbance (FERC Plan Section IV.A.)

1. Project-related ground disturbance shall be limited to the construction right-of-way, extra workspace areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the certificate. Any Project-related ground-disturbing activities outside these certificated areas, except those needed to comply with the Plan and Procedures (e.g., slope breakers, energy-dissipating devices, dewatering structures, drain tile system repairs) will require prior Director approval. All construction or restoration activities outside of the certificated areas are subject to all applicable survey and mitigation requirements.

2. The construction right-of-way width shall not exceed that described in North Baja's FERC application unless otherwise modified by a certificate condition. However, in limited non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions, such as side-slopes, require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland or non-forested areas for truck turnaround where no reasonable alternative access exists.

   Project use of these additional limited areas is subject to landowner approval and compliance with all applicable survey and mitigation requirements. When such additional areas are used, each one would be identified and the need explained in the weekly or biweekly construction reports to the FERC. The following material would be included in the reports:

a. the location of each additional area by station number and reference to a previously filed alignment sheet, or updated alignment sheets showing the additional areas;

b. identification of where the Commission's records contain evidence that the additional areas were previously surveyed; and

c. a statement that landowner approval has been obtained and is available in Project files.

Prior written approval of the Director is required when the certificated construction right-of-way width would be expanded by more than 25 feet.

3.4.2 Topsoil Segregation (FERC Plan Section IV.B., Modified)

1. Unless the landowner or land management agency specifically approves otherwise, prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in:
    - native desert habitats (based on desert restoration techniques found in Section 2 of this CM&R Plan);
    - annually cultivated or rotated agricultural lands and pastures;
    - hayfields;
    - residential areas; and
    - other areas at the landowner's or land managing agency’s request (FERC Plan Section IV.B.1, modified).
2. In residential areas topsoil replacement (i.e., importation of topsoil) is an acceptable alternative to topsoil segregation. (FERC Plan Section IV.B.2).
3. In agricultural fields, to maintain the integrity of the temporarily displaced topsoil horizon (depth to be determined before construction), topsoil will be stripped to its actual depth up to 2 feet and stockpiled at the edge of the right-of-way so that it can be replaced, as nearly as possible, in the topsoil’s original position within the soil profile.
4. Where topsoil segregation is required, maintain separation of salvaged topsoil and subsoil throughout all construction activities.
5. Segregated topsoil may not be used for padding the pipe or backfilling the trench (FERC Plan Section IV.B.5).

3.4.3 Drain Tiles (FERC Plan Section IV.C., Modified)

This section does not apply because the Project does not cross land with drain tiles.

3.4.4 Irrigation (FERC Plan Section IV.D.)

Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.

3.4.5 Road Crossings and Access Points (FERC Plan Section IV.E., Modified)

Maintain safe conditions at all road crossings in accordance with the road crossing. North Baja will not use crushed stone access pads in residential or active agricultural areas, so Part 2 does not apply.

3.4.6 Temporary Erosion Control (FERC Plan Section IV.F., Modified)

North Baja does not propose to install temporary erosion controls. This is because of the level topography along most of the route and the stony soil where slopes are somewhat steeper along portions of the B-Line route east of Highway 78. In the Project area, rainfall amounts average less than 5 inches annually, but rain often occurs in intense cloudbursts that result in flash flooding, which in turn renders typical erosion controls (silt fence, hay bales, etc.) ineffective. Therefore, Part 1, regarding temporary slope breakers; Part 2, regarding sediment barriers; and Part 3, regarding mulch do not apply to this Project.

3.5 RESTORATION

3.5.1 Cleanup (FERC Plan Section V.A., Modified)

1. Commence cleanup operations immediately following backfill operations. Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 days after backfilling the trench (10 days in residential areas). Weather compliance limitations are not applicable in this climate; therefore, part of this Part 1 does not apply.
2. Section 2 is not applicable because temporary erosion controls are not needed.
3. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench should be considered construction debris, unless approved for use as mulch or for some other use on the construction work areas by the landowner or land managing agency.
4. Remove excess rock from at least the top 12 inches of soil in all actively cultivated or rotated cropland and pastures, hayfields, and residential areas, as well as other areas at the landowner's request. The size, density, and distribution of rock on the construction work area should be similar to adjacent areas not disturbed by construction. The landowner may approve other provisions in writing.
5. Grade the construction right-of-way to restore pre-construction contours.
6. Remove construction debris from all construction work areas unless the landowner or land managing agency approves otherwise, and the debris left behind will be in compliance with all applicable laws and regulations.
7. Section 7 does not apply because temporary erosion control measures are not applicable.

3.5.2 *Permanent Erosion Control Devices (FERC Plan Section V.B.)*

1. Trench Breakers

   a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sand bags or polyurethane foam. Do not use topsoil in trench breakers.

   b. An engineer or similarly qualified professional shall determine the need for and spacing of trench breakers. Otherwise, trench breakers shall be installed at the same spacing as and upslope of permanent slope breakers.

   c. In agricultural fields and residential areas where slope breakers are not typically required, install trench breakers at the same spacing as if permanent slope breakers were required.

   d. At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland.

2. Permanent Slope Breakers

   a. Permanent slope breakers are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent slope breakers may be constructed of materials such as soil, sand bags, or some functional equivalent.

   b. Construct and maintain permanent slope breakers in all areas, except cultivated areas and lawns, using spacing recommendations obtained from the local soil conservation authority or land managing agency.

   In the absence of written recommendations, use the following spacing unless closer spacing is necessary to avoid excessive erosion on the construction right-of-way:

Slope (%)	Spacing (ft.)
5 – 15	300
>15 – 30	200
>30	100

   c. Construct slope breakers to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, construct appropriate energy-dissipating devices at the end of the breaker.

   d. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where slope breakers extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.

3.5.3 Soil Compaction Mitigation (FERC Plan Section V.C., Modified)

1. Test topsoil and subsoil for compaction at regular intervals in agricultural and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to identify approximate preconstruction conditions. Use penetrometers or other appropriate devices to conduct tests.

   Sampling Procedure: Compaction sampling will be carried out by staff along the right-of-way at 1-mile intervals in fine-textured soils where compaction may be a concern. At least three measurements inside the right-of-way and three measurements outside the right-of-way will be taken. Measurements will be taken in line perpendicular to the centerline. Three test points will be taken along the travel corridor on the working side of the right-of-way. This is a heavily traveled area immediately adjacent to the centerline trench and is the most likely candidate for severe compaction. One point will be sampled over the approximate center of the travel corridor and two other points 5 feet in either direction. Three test points will be taken at 5 feet, 10 feet, and 15 feet outside of the right-of-way limits on the working side of the right-of-way. Penetrometer readings will be taken at a depth of 3 inches, 6 inches, and 9 inches (where soil conditions allow).

   If severe compaction exists along the right-of-way (see below, *Penetration Parameters*), additional testing will be conducted at 0.1-mile intervals in either direction following the above-described methods until the area where compaction is severe has been defined.

   Penetration Parameters: Penetration resistance of soils ranges from 0 pounds per square inch (PSI) to 725 PSI. Plant roots can no longer penetrate the soil mass at densities above 725 PSI. Undisturbed resistance values for native soils range from 0 to 100 PSI for sandy or organic topsoils to 300 to 500 PSI for clayey subsoil. In comparing affected to unaffected sites, an increase in penetration resistance of 300 PSI, equivalent to over one-level increase in resistance category, is a reasonable gauge of compaction. Use of cone penetrometers may be impossible in extremely rocky or gravelly desert soils. If the equipment cannot easily be used to a depth of at least 3 inches because of obstruction from rocks, gravel, or plant roots, the assumption will be that there is sufficient coarse material in the soil to ameliorate compaction and that further testing or soil manipulation is not required.

2. Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil. Alternatively, make arrangements with the landowner to plant and plow under a "green manure" crop, such as alfalfa, to decrease soil bulk density and improve soil structure. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.

3. Perform appropriate soil compaction mitigation in severely compacted residential areas.

4. Compaction is normally a concern during pipeline construction. However, based on the soils analysis conducted by North Baja (see Resource Report 7) there is little potential for compaction in the coarse-textured soils of the desert areas. Construction of the A-Line did not result in any compaction problems in native desert habitats, and revegetation progress has been very good. Soils that are poorly, somewhat poorly, or very poorly drained have compaction potential,

depending on soil texture. A query of the State Soil Geographic (STATSGO) database determined that for this pipeline route, including the IID Lateral, there are **no** soils in these categories. Therefore, based on the STATSGO information, there is little potential for soil compaction.

Soil compaction testing will not be conducted in desert habitats where compaction did not occur during the construction of the A-Line. Testing completed for the A-Line indicated no areas of compaction in native desert habitats. No additional testing is needed in the same soil types and in the same areas. Soil testing will be conducted in fine-textured soils along the IID Lateral in native desert habitats. Note that no such soils have been shown to exist in the STATSGO database, and no compaction potential has been identified for these areas. However, if fine-textured soil is encountered, as identified by the Environmental Inspector or the BLM, compaction testing will be conducted, using the compaction testing procedure identified in section 1. above.

Soil Treatment: Reservation of topsoil and imprinting practices will be relied upon except in cases of severe soil compaction caused by Project activities. Soil ripping will be applied when average penetrometer readings of compacted soils on the pipeline corridor are ≥ 300 PSI more than soils unaffected by compaction. Ripping will be carried out with an implement that has as small a space between tines that can be effectively passed through the soil. Depth of ripping will be 6 to 9 inches, or as specified by inspectors. Rocks and root masses may preclude ripping in some areas.

3.5.4 Revegetation (FERC Plan Section V.D., Modified)

1. Restoration methods for desert habitats are specified in Section 2, above. Where applicable in residential areas, North Baja will restore all turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Restoration work must be performed by personnel familiar with local horticultural and turf establishment practices.
2. North Baja will not use soil modifiers or seeding; therefore Parts 2 and 3 do not apply.

3.6 OFF-ROAD VEHICLE CONTROL (FERC PLAN SECTION VI., MODIFIED)

Where requested, North Baja will offer to install and maintain measures to discourage unauthorized vehicle access to the right-of-way. These may include signs or other barriers along the right-of-way. See also Section 2, above, and Appendix P, OHV Management Plan.

3.7 POST-CONSTRUCTION ACTIVITIES

3.7.1 Monitoring and Maintenance (FERC Plan Section VII.A., Modified)

1. Conduct follow-up inspections of all disturbed areas after the first and second growing seasons to determine the success of restoration.

2. North Baja has specified special restoration measures for desert habitats. See Section 2, above. Therefore, Part 2 of the FERC Plan Section VII.A. is modified, Part 4 is not applicable, and Part 6 is modified to recognize that full control of OHV use in the desert is not feasible. Restoration shall be considered successful in agricultural areas if crop yields are similar to adjacent undisturbed portions of the same field. Continue revegetation efforts in agricultural areas until revegetation is successful.

3. Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in active agricultural areas until restoration is successful.

4. (Not applicable—modified by Section 2, above).

5. To facilitate periodic corrosion and leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be maintained annually.

6. In native desert habitats, restoration shall be considered successful if the right-of-way is similar in species composition to adjacent undisturbed lands.

   Post-construction monitoring would be conducted annually in areas of native desert habitats disturbed by construction through 2012. Results of the monitoring will be provided in full reports to the FERC, BLM, CSLC, BOR, FWS, and CDFG. If, after 5 years of monitoring where rainfalls have been at least average for the area, revegetation of the construction work area in native desert habitats is determined to be unsuccessful, North Baja will consult with FERC, BLM, CSLC, BOR, FWS, and CDFG and develop a remedial restoration plan for desert revegetation. The remedial plan will be based upon assessments of the extent of the failure, the reasons for the failure, and conditions on the right-of-way, such as whether a viable seed source still exists in the soil. It is very unlikely that a remedial plan would include irrigation, which is impracticable in most settings along the pipeline. Options may include selective re-scarification of the surface, with or without supplemental seeding, or allowing more time for natural regeneration to occur. For each year that rainfall amounts have been less than 80 percent of average after 1 drought year subsequent to construction, an additional year shall be granted beyond the initial 5 years for native vegetation to establish before North Baja would be obliged to examine remedial measures.

7. Efforts to discourage unauthorized off-road vehicle use, in cooperation with the landowner, shall continue throughout the life of the Project. Maintain signs, gates, and vehicle trails as necessary.

3.7.2 Reporting (FERC Plan Section VII.B., Modified)

1. Part 1 of Section VII.B. is not applicable because no soil modifiers or seeding is necessary or proposed for the Project.
2. North Baja shall file with the FERC and the CSLC quarterly activity reports documenting problems, including those identified by the landowner, and corrective actions taken for at least 2 years following construction.

4.0 WETLANDS AND WATERBODIES

4.1 APPLICABILITY (FERC PROCEDURES SECTION I., MODIFIED)

A. The intent of these Procedures is to minimize the extent and duration of Project-related disturbance of wetlands and waterbodies. North Baja has specified measures considered unnecessary, technically infeasible, or unsuitable due to local conditions, and has described any alternatives herein.

Once a Project is certificated, further changes can be approved. Any such changes from the measures in these Procedures (or the Applicant's approved CM&R Plan) will be approved by the Director of the Office of Energy Projects (Director), upon the Applicant's written request, if the Director agrees that an alternative measure:

1. provides equal or better environmental protection;
2. is necessary because a portion of these Procedures is infeasible or unworkable based on Project-specific conditions; or
3. is specifically required in writing by another Federal, State, or Native American land management agency for the portion of the Project on its land or under its jurisdiction.

Project-related impacts on non-wetland areas are addressed in the staff's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

B. Definitions

1. "Waterbody" includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes:
    a. "minor waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of crossing;
    b. "intermediate waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of crossing;
    c. "major waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of crossing.
2. "Wetland" includes any area that is not in actively cultivated or rotated cropland and that satisfies the requirements of the current Federal methodology for identifying and delineating wetlands.

4.2 PRECONSTRUCTION FILING (FERC PROCEDURES SECTION II, MODIFIED)

A. North Baja shall file with the Secretary before construction the hydrostatic testing information and an updated wetland delineation report, if needed. North Baja will not use underwater blasting on the Project. Trenching will be used in a waterbody only to cross Rannells Drain, which is covered in Section 4.5.2, Paragraph 4, of this CM&R Plan.

B. North Baja shall file the following site-specific construction plans with the FERC for review and written approval by the Director of OEP before construction.

1. Part 1 does not apply because as no extra workspaces are planned within 50 feet of a waterbody.
2. Part 2 does not apply because there are no major waterway crossings except as covered in 4, below.
3. Part 3 does not apply because the construction right-of-way in the only wetlands crossed by trenching is covered in Section 4.6, below.
4. Horizontal directional drill plans for "crossing" the Colorado River, the AAC, and the East Highline Canal.

4.3 ENVIRONMENTAL INSPECTORS (FERC PROCEDURES SECTION III., MODIFIED)

A. At least two Environmental Inspectors having knowledge of the wetland and waterbody conditions in the Project area are required for each construction spread. The number and experience of Environmental Inspectors assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected.

B. The Environmental Inspector's responsibilities are outlined in Section 3.2.2, above.

4.4 PRECONSTRUCTION PLANNING

4.4.1 Stormwater Pollution Prevention Plan (FERC Procedures Section IV.A., Modified)

A. A copy of the SWPPPs that would be prepared in accordance with the requirements of the Arizona Department of Environmental Quality, Division of Water Quality and the California Regional Water Quality Control Board, Colorado River Basin Region must be available in the field on each construction spread. The SWPPPs shall contain Spill Prevention and Response Procedures that meet the requirements of applicable agencies.

1. North Baja and its contractors will structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands.

   a. all employees handling fuels and other hazardous materials are properly trained;
   b. all equipment is in good operating order and inspected on a regular basis;
   c. fuel trucks transporting fuel to on-site equipment travel only on approved access roads;
   d. all equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area, at least 100 feet from a wetland boundary, and at least 200 feet from any private, municipal or community water well. These activities can occur closer only if the Environmental Inspector finds, in advance, no reasonable alternative and the Project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
   e. hazardous materials, including chemicals, fuels, and lubricating oils, are not stored within 200 feet of a wetland, 200 feet from private wells, and 400 feet from municipal water supply wells, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas; and
   f. concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use.

2. North Baja and its contractors will structure their operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. North Baja will:

   a. ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills;
   b. ensure that each construction crew has on hand sufficient tools and material to stop leaks;
   c. know the contact names and telephone numbers for all local, State, and Federal agencies (including, if necessary, the U. S. Coast Guard and the National Response Center) that must be notified of a spill; and
   d. follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.

B. North Baja shall coordinate with the appropriate local, State, and Federal agencies.

4.5 WATERBODY CROSSINGS

4.5.1 Notification Procedures and Permits (FERC Procedures Section V.A., Modified)

1. North Baja will apply to the U.S. Army Corps of Engineers (COE) for the appropriate wetland and waterbody permits required for the proposed construction activities.

2. Part 2 does not apply because there are no potable surface water supply intakes within 3 miles downstream of the proposed crossing.

3. North Baja will apply for State-issued waterbody crossing permits and obtain a Section 401 Water Quality Certification.

4. Notify appropriate State authorities at least 48 hours before trenching within the waterbody, or as specified in State permits.

4.5.2 *Installation (FERC Procedures Section V.B., Modified)*

1. Time windows for construction do not apply, since fisheries are not affected. North Baja will cross the Colorado River, the AAC (three crossings) and the East Highline Canal using the horizontal directional drill method, and no instream work will occur. The other waterbodies crossed by the proposed Project (with the exception of Rannells Drain) are canals, drainage ditches, or streams (Alamo River) that will be crossed within county or private roads using existing culverts and road fill or bored beneath the canal structure. Rannells Drain, which is not a classified fishery, will be the only waterbody crossed using the open-cut method.
2. Extra Work Areas
    a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land.

    b. North Baja will file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50 foot setback from the water's edge, (except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback.

    c. Limit clearing of vegetation between extra work areas and the edge of the waterbody to the certificated construction right-of-way.

    d. Limit the size of extra work areas to the minimum needed to construct the waterbody crossing.
3. General Crossing Procedures
    a. Comply with the Section 404 permit and Section 401 Water Quality Certification in addition to terms and conditions of other applicable permits.

    b. Construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit.

    c. If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way.

    d. Part d does not apply because the waterways crossed do not meander or have multiple channels.

    e. Maintain adequate flow rates to protect aquatic life, and prevent the interruption of existing downstream uses.

   f. Waterbody buffers (extra work area setbacks, refueling restrictions, etc.) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

4. Spoil Pile Placement and Control

   a. All spoil must be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas.

   b. Use sediment barriers to prevent the flow of spoil into any waterbody.

5. Part 5 does not apply because no equipment bridges are proposed for the Project.

6. Part 6 does not apply because no dry-ditch crossing methods are proposed for the Project.

7. Part 7 does not apply because no minor waterbody crossings are proposed for the Project.

8. Crossings of Intermediate Waterbodies (applies only to the open-cut crossing of Rannells Drain)

   a. Attempt to complete trenching and backfill work within the waterbody (not including bank grading) within 72 hours, unless site-specific conditions make completion within 72 hours infeasible.

   b. Limit use of equipment operating in the waterbody to that needed to construct the crossing.

9. Part 9 does not apply because no major waterbody crossings are proposed for the Project.

10. Temporary Erosion and Sediment Control (applies only to Rannells Drain Crossing)

    North Baja will install sediment barriers immediately after disturbance of Rannells Drain or the adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan; however, the following specific measures must be implemented at stream crossings:

    a. install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. In the travel lane, these may consist of removable sediment barriers or driveable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;

    b. where waterbodies are adjacent to the construction right-of-way, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way; and

c. use trench plugs at all waterbody crossings, as necessary, to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody.

11. Trench Dewatering.

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any waterbody. Remove the dewatering structures as soon as possible after the completion of dewatering activities.

4.5.3 Restoration (FERC Procedures Section V.C., Modified)

1. Part 1 does not apply because there are no cold-water fisheries crossed by the Project.
2. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing instream construction activities. There are no dry-ditch crossings for the Project.
3. Return all waterbody banks to preconstruction contours or to a stable angle of repose as approved by the Environmental Inspector.
4. Part 4 does not apply because riprap will not be used on the Project.
5. Part 5 does not apply because riprap will not be used on the Project.
6. Part 6 does not apply because the Project will not disturb any riparian areas.
7. Part 7 is covered in Section 3.5.2, above, and will apply to Rannell's Drain crossing only.
8. Part 8 does not apply because there are no perennial or intermittent streams crossed by the Project.

4.5.4 Post-Construction Maintenance (FERC Procedures Section V.D., Modified)

1. Vegetation maintenance adjacent to waterbodies or in dry washes will be limited to that needed to facilitate periodic pipeline corrosion/leak surveys. This part is modified to reflect that the Project does not impact any riparian areas and includes dry wash crossings not covered in the Procedures.
2. No herbicides or pesticides will be used in or within 100 feet of a waterbody except as specified by the appropriate land management or State agency.

4.6 WETLAND CROSSINGS (FERC PROCEDURES SECTION VI, MODIFIED)

4.6.1 General (FERC Procedures Section VI.A., Modified)

1. North Baja has completed wetland delineations along the North Baja Project route. Eighteen wetlands were identified with a total crossing length of 14,493 feet. Construction impact on six of the wetlands will be avoided by the directional drills of the Colorado River (two wetlands), the AAC (two wetlands), and the East Highline Canal (two wetlands). Of the remaining twelve wetlands, three will be avoided by building in the roadway (IID Lateral at the Alamo River, Acacia Lateral Canal, and Alder Lateral Canal). The other nine wetlands, all sodic seasonal wetlands with non-native tamarisk as the dominant vegetation, will be trenched, for a total crossing length of 13,660 feet.

2. North Baja routed its pipeline to avoid wetlands to the maximum extent possible. Where the B-Line crosses wetlands, it does so only 25 feet from the existing A-Line.

3. The B-Line width through the sodic seasonal wetlands in the wetlands covered by the FERC Procedures will be 105 feet. The degraded nature of the wetland and the extensive and rapidly invading presence of tamarisk does not warrant right-of-way narrowing in this area. Following post-construction of the A-line, representative vegetative sampling plot locations were established to monitor the revegetation of impacted areas. These surveys were conducted twice per year for the first 2 years and continue to be conducted annually. North Baja has filed annual reports with FERC, CSLC, BLM, and CDFG as agreed in the CM&R Plan for the A-Line construction. These reports document revegetation of native and nonnative species. Representative plot locations established within these monotypic tamarisk wetlands have shown rapid re-establishment of tamarisk with a range of cover between 5 to 40 percent, and limited species diversity of shrubs. Colonization of these wetlands consists almost entirely of tamarisk with several individuals of salt bush (*Atriplex lentiformes*). These wetland areas contain very high concentrations of salts, which precludes colonization of most native vegetation, with the exception of salt bush and iodine bush.

4. Wetland boundaries and buffers will be clearly marked in the field until construction-related ground-disturbing activities are complete.

5. Part 5 does not apply because no water crossing is located within a wetland.

6. Part 6 does not apply because no aboveground facilities will be located in wetlands.

4.6.2 Installation (FERC Plan Section VI.B., Modified)

1. Extra Work Areas and Access Roads

   a. North Baja will locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. Exceptions are listed in Table E-2, below.

   b. Table E-2, below, lists needed extra workspaces in wetlands and includes a brief explanation of the need for each workspace. North Baja does not believe additional drawings are needed.

Table E-2 Extra Workspaces Needed in Wetlands

Approximate Milepost	County, State	Wetland Identifier	Need for EWS	Orientation to ROW	Disturbance Acres	
					Total	New
BEI Lateral						
			No Wetlands			
SoCal Interconnect						
			No Wetlands			
B-Line						
28.2	Imperial, CA	N68-WE-29	Horizontal Bore, Hwy 78	East	0.1	0.0
28.3	Imperial, CA	N69-WE-29	Horizontal Bore, Hwy 78	East	0.2	0.0
28.5	Imperial, CA	N70-WE-29	Offset EWS to avoid powerline	West	0.5	0.5
31.9	Imperial, CA	CWE-5	Offset EWS to avoid steep sideslopes and powerline	East	1.5	0.0
32.1	Imperial, CA	CWE-5	Offset EWS to avoid steep sideslopes and powerline	West	0.3	0.3
IID Lateral						
27.5	Imperial, CA	East Highline Canal – East	Set up area for HDD Pullback	South	0.1	0.1
			Total Acres		**2.7**	**0.9**

   c. North Baja will limit clearing of vegetation between extra work areas and the edge of the wetland to the certificated construction right-of-way.

   d. The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats). In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access roads in upland areas do not provide reasonable access, limit all other construction equipment to one pass through the wetland using the construction right-of-way.

   e. The only access road that crosses a wetland is an existing access road.

2. Crossing Procedures

   a. Comply with the Section 404 permit and Section 401 Water Quality Certification in addition to terms and conditions of other applicable permits.

   b. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.

   c. Use "push-pull" or "float" techniques to place the pipe in the trench where water and other site conditions allow.

   d. Minimize the length of time that topsoil is segregated and the trench is open.

   e. Limit construction equipment operating in wetland areas to that needed to clear the right-of-way, separate and stockpile topsoil, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the right-of-way.

   f. Cut vegetation just above ground level, leaving existing root systems in place, and remove it from the wetland for disposal if the wetland is dominated by native species.

   g. All tamarisk trees and shrubs will be removed, including stumps and root systems, and either burned or disposed using covered dump trucks to approved public facilities.

   h. Segregate the top 1 foot of topsoil from the area disturbed by trenching except in areas where standing water or saturated soils are present. After backfilling is complete, restore the segregated topsoil to its original location.

   i. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to stabilize the right-of-way.

   j. If standing water or saturated soils are present, use low-ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats or terra mats.

   k. Part k does not apply because timbers will not be used on the Project.

   l. Part l does not apply because timbers will not be used on the Project.

   m. Remove all Project-related material used to support equipment on the construction right-of way upon completion of construction.

3. Temporary Sediment Control

   Wetland crossings on the Project are constructed in flat terrain. No sediment controls are needed and Part 3 does not apply.

4. Trench Dewatering

   a. Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any wetland. Adhere to all applicable permits, including water quality sampling and monitoring as required. Remove the dewatering structures as soon as possible after the completion of dewatering activities.

4.6.3 Restoration (FERC Plan Section VI.C., Modified)

1. Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary to maintain the original wetland hydrology.
2. Wetland crossings on the Project are constructed in flat terrain. No trench breakers, slope breakers or sediment barriers are needed and Part 2 does not apply.
3. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or State agency.
4. Since the only wetlands that are crossed by trenching are sodic seasonal wetlands with monotypic tamarisk vegetation within and adjacent to the existing and proposed right-of-way, North Baja does not propose any restoration beyond that specified in Section 2, above. During construction of the A-Line, the manager of the Cibola NWR requested that sheepsfooting not be used, and North Baja is not proposing to use sheepsfooting in these wetlands after B-Line construction. Therefore, parts 4, 5, and 6 do not apply. No temporary sediment barriers are necessary or proposed; therefore, Part 7 does not apply.

4.6.4 Post-Construction Maintenance (FERC Plan Section VI.D., Modified)

1. Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in a herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be selectively cut and removed from the right-of-way.
2. Do not use herbicides or pesticides in or within 100 feet of a wetland, except as allowed by the appropriate land management agency or State agency.
3. Monitoring and success criteria are specified in Section 2, above. Therefore, parts 3 and 4 do not apply.

4.7 HYDROSTATIC TESTING

4.7.1 Notification Procedures and Permits (FERC Plan Section VII.A.)

1. Apply for State-issued withdrawal permits, as required.
2. Apply for National Pollutant Discharge Elimination System (NPDES) or State-issued discharge permits, as required.
3. Notify appropriate State agencies of intent to use specific sources at least 48 hours before testing activities unless they waive this requirement in writing.

4.7.2 General (FERC Plan Section VII.B.)

1. North Baja will perform 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands.
2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetlands, address the operation and refueling of these pumps in the SPCC Plan.
3. North Baja will file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location.

4.7.3 Intake Source and Rate (FERC Plan Section VII.C.)

1. Screen the intake hose to prevent entrainment of fish.
2. North Baja will not use State-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal, State, and/or local permitting agencies grant written permission.
3. Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.
4. Hydrostatic test manifolds will be located outside wetlands and riparian areas to the maximum extent practicable.

4.7.4 Discharge Location, Method, and Rate (FERC Plan Section VII.D., Modified)

1. Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive streamflow. Adhere to all applicable permits, including water quality sampling and monitoring as required.
2. Do not discharge into State-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal, State, and local permitting agencies grant written permission.

APPENDIX F

SPILL PREVENTION, CONTAINMENT, AND CONTROL PLAN FOR HAZARDOUS MATERIALS AND WASTES

TransCanada
In business to deliver

North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix F
Spill Prevention, Containment, and Control Plan for Hazardous Materials and Wastes

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Appendix F

Spill Prevention, Containment, and Control Plan for Hazardous Materials and Wastes

1.0 INTRODUCTION

1.1 PURPOSE OF THE SPILL PREVENTION, CONTAINMENT AND CONTROL PLAN

This Spill Prevention, Containment and Control (SPCC) Plan[1] has been developed as a good management practice to provide guidelines for hazardous materials (including oil) and hazardous waste management, to prevent releases to the environment, and to plan actions to take in the event of a release.

This SPCC Plan applies to planning and construction through initial operation of the North Baja Expansion Project, including the IID and BEI Laterals. Activities of North Baja Pipeline staff and its Contractors are subject to the requirements of this SPCC Plan. This SPCC Plan will be followed in the event of a release of oil, hazardous material or waste to the environment.

1.2 NORTH BAJA EXPANSION PROJECT DESCRIPTION

The North Baja Pipeline Expansion Project (Project) will construct a new natural gas pipeline to connect with the Gasoducto Bajanorte Pipeline at the U.S.-Mexico border and to the existing North Baja facilities and the El Paso Natural Gas system in Ehrenberg, Arizona. In addition, new connections will be made with the Southern California Gas Company (SoCal Gas) system and with the Blythe Energy Facility I supply pipeline, both in Blythe, California, and with the Imperial Irrigation District's (IID) El Centro Generating Station in El Centro, California. The proposed Project will be constructed in phases, with the first phase planned for construction in 2007, the IID Lateral for 2008, and the final phase of the North Baja Expansion in 2009, pending completion of upstream liquefied natural gas (LNG) terminal facilities.

The Project includes four elements: the B-Line, which includes a metering station and interconnection facilities in Ehrenberg, Arizona and Blythe, California, as well as an 80-mile,

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[1] This SPCC Plan has been developed to meet the intent of FERC requirements for spill prevention, containment and control plans; oil spill prevention control and countermeasure provisions of 40 CFR 112; the environmental emergency preparedness and prevention provisions of 40 CFR Subparts C and D for hazardous waste management; Arizona Administrative Code, Title 18, Chapter 8 and Title 22 of California Code of Regulations on hazardous waste management; and, California Business Plan requirements for hazardous materials management.

42- and 48-inch diameter pipeline between Blythe and the Mexican border; the Blythe Energy Interconnection Lateral (BEI Lateral), a 0.6-mile, 10-inch diameter pipeline that connects the Blythe Meter Station to the existing supply pipeline for the Blythe Energy Facility I; the short (less than 0.1-mile) 36-inch diameter SoCal Gas Interconnection Pipeline (located within the Blythe Meter Station and discussed with the Station); and the Imperial Irrigation District Lateral (IID Lateral), a 46-mile, 16-inch diameter pipeline between the B-Line and IID's El Centro Generating Station.

1.3 RESPONSIBILITIES UNDER THIS SPCC PLAN

1.3.1 North Baja Pipeline Expansion Project Representatives

The Chief Inspector (CI) will evaluate and approve each construction contractor's (Contractor) submittal under this SPCC Plan. The Project Environmental Inspector (EI) will oversee implementation of this SPCC Plan and of the Contractor's plans and submittals incorporated by reference. The EI will conduct regular inspections of Contractor activities and identify any issues that may require correction. The EI has the authority to stop construction to correct issues, if necessary.

North Baja Pipeline Expansion Project Representatives

Function	Name	Location	Telephone No.
North Baja Pipeline Expansion Project Manager (PM):			
Chief Inspector (CI):			
Environmental Inspector (EI):			
Emergency Response Coordinator: Primary			
Emergency Response Coordinator: Secondary			
Emergency Response Contractors: (Company/Responsibility)			
Spill Response:			
Transportation Services:			
Site Remediation:			

1.3.2 Contractor Responsibilities

The Contractor will prepare plans and submittals under this SPCC Plan that will include activities of Contractor and its Subcontractors. Contractor will ensure that such documents are maintained current and complete, and that this SPCC Plan is fully implemented.

Primary Contractor Representatives

	Name	Location	Telephone No.
Contractor:			
On-Site Foreman:			
Emergency Response Coordinator: Primary			
Emergency Response Coordinator: Secondary			
Environmental Contact:			
Safety Representative:			

Subcontractor Representatives

	Name	Location	Telephone No.
Subcontractor:			
On-Site Foreman:			
Emergency Response Coordinator: Primary			
Emergency Response Coordinator: Secondary			
Environmental Contact:			
Safety Representative:			
Scope of Subcontract:			

Subcontractor Representatives

	Name	Location	Telephone No.
Contractor:			
On-Site Foreman:			
Emergency Response Coordinator: Primary			
Emergency Response Coordinator: Secondary			
Environmental Contact:			
Safety Representative:			
Scope of Subcontract:			

Subcontractor Representatives

	Name	Location	Telephone No.
Contractor:			
On-Site Foreman:			
Emergency Response Coordinator: Primary			
Emergency Response Coordinator: Secondary			
Environmental Contact:			
Safety Representative:			
Scope of Subcontract:			

Responsibilities identified as "Contractor" in subsequent sections of this SPCC Plan apply to each Contractor and Subcontractor.

2.0 SPILL PREVENTION PRACTICES

2.1 SITE SELECTION

Site selection for Project staging areas where hazardous materials and hazardous wastes may be present have considered and avoided environmentally sensitive areas. These sites are located at least 100 feet from water bodies and 200 feet from any private, municipal or community water well. Hazardous materials and wastes may not be stored, handled or used in an area that has not been approved for that purpose by the CI.

2.2 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

Each Contractor is required to develop a site-specific Contractor's Hazardous Materials and Waste Management Plan (Attachment A) that identifies the hazardous materials that the Contractor will use and the wastes that the Contractor may generate during Project activities. This includes MSDSs or waste designation information, quantities, locations of storage and use, container or tank used, secondary containment, and inspection procedures.

2.2.1 Hazardous Materials

No new hazardous material may enter the job site without an amendment to the Contractor's Hazardous Materials and Waste Management Plan and without the express approval of the EI.

Usable hazardous materials will be removed by Contractor for its future use upon completion of work on-site.

2.2.2 Wastes

Each waste generated will be evaluated for appropriate waste designation and appropriate disposal.

2.2.2.1 Rights-of-Way and Sites Owned or Leased by the North Baja Pipeline Expansion Project

Wastes generated at the right-of-way and at sites owned or leased by North Baja that have potential of being hazardous waste will be returned to the approved staging point, whereupon the EI will be notified. As necessary, Contractor will sample wastes and request assistance of the EI in waste management.

The Project EI is responsible for designation of hazardous waste, universal waste, special waste or recyclable hazardous materials in accordance with North Baja's guidelines (Attachment E) and State-specific requirements (22 California Code of Regulations and Title 18, Chapter 8 of Arizona Administrative Code).

Regulated wastes will be placed into North Baja-approved containers, maintained in good condition, maintained closed and appropriately labeled. Containers will be in an approved area and EI will be notified of the waste activity. North Baja Representatives will arrange for appropriate disposal of regulated wastes.

2.2.2.2 Contractor Leased Facility

Contractor is responsible for disposal of non-hazardous waste generated as a result of on-site activities where the staging point is the Contractor's leased facility.

Contractor will manage used oil and antifreeze generated by its equipment maintenance activities as required by Federal and State regulations.

Contractor is responsible for appropriate waste designation, management of wastes and appropriate disposal for wastes generated at Contractor's Leased Facility.

2.2.2.3 Domestic Sewage

Domestic sewage will be handled by means of portable self-contained toilets during constructions that are stationed at central locations and reasonable distances throughout the work area.

2.2.2.4 Waste Disposal On-Site Prohibited

In no case will any waste material be disposed of at the job site, right-of-way location, or adjacent property.

2.3 SPILL PREVENTION

The Contractor will store, handle, and transfer fluids used during construction so as to prevent the release of spill of oil or other hazardous materials. Materials that are likely to be used in construction equipment include gasoline, diesel fuel, hydraulic fluid, and lubricating oils.

2.3.1 Tank and Container Specifications

Specifications for tanks and containers must meet generally approved standards (including but not limited to supplier's recommendations and specifications of the U.S. Department of Transportation (DOT) and California Highway Patrol (CHP)). In meeting these standards, tanks and containers must continuously be of integrity and condition to be acceptable for storage and transportation.

2.3.2 Dispensing and Transfer

Dispensing and transfer of hazardous materials and wastes must occur in accordance with nationally recognized standards. This includes bonding or grounding during transfer of flammable liquids. Contractor will inspect transfer of hazardous materials and waste.

Transfer of liquids and refueling will occur only at approved locations that are at least 100 feet away from any wetlands or surface waters, and 200 feet from any private, municipal or community water well, with certain exceptions noted below (see Section 2.3.4, Setback Exceptions).

Crew must have adequate spill response equipment available at the dispensing or transfer location.

Repair/overhaul of equipment will not occur at the right-of-way or temporary work space except for emergency type repair of short duration. Any liquids will be collected in suitable containers and appropriately disposed of.

When materials are transferred from a storage tank or container to a vehicle, the Contractor will:

- operate during daylight hours or where lighting is adequate to illuminate the area;
- monitor the transfer operations at all times;
- refuel at least 100 feet from wetlands or surface waters and at least 200 feet from potable water supplies, with certain exceptions noted below,
- keep sufficient spill control materials on site; and
- in the event of a spill, implement the spill response procedures.

2.3.3 Materials Storage

When materials are stored in a fuel storage tank, the Contractor will:

- locate the tank at least 200 feet from wetlands, 200 feet from private wells, and 400 feet from municipal water supply wells, with certain exceptions noted below (see Section 2.3.4, Setback Exceptions);
- install a temporary earthen berm around the tank and line it with plastic to provide containment;
- inspect the tank, berm and liner daily;
- correct any conditions that could result in a spill, leak, or compromise the integrity of the secondary containment;
- plug or close all tank openings when not in use;

- remove any precipitation from the bermed area with a pump (Note: inspect precipitation for an oil sheen and, if sheen is present, collect the liquid for disposal.)
- keep sufficient spill control materials on site.

When materials are stored in a container, the Contractor will:

- store containers at least 100 feet from wetlands with certain exceptions noted below (see Section 2.3.4, Setback Exceptions);
- use small containers which are in good condition (maximum capacity 55 gallons);
- protect the containers from the elements and physical damage;
- replace any leaking or damaged containers;
- close containers when not in use; and
- keep sufficient spill control materials on site.

2.3.4 Setback Exceptions

The dispensing and transfer (e.g., refueling) setbacks identified above may not be practical for certain construction activities in certain locations. Exceptions may only be allowed for:

- areas such as rugged terrain or steep slopes where movement of equipment to refueling stations would cause excessive disturbances to the surface of the right-of-way;
- construction sites where moving equipment to refueling stations is impractical or where there is a natural barrier from the waterbody or wetland (e.g., road or railroad);
- locations where the waterbody or wetland is located adjacent to a road crossing from which the equipment can be serviced; and
- refueling and fuel storage for immobile equipment (including but not limited to bending and boring machines, air compressors, hydrotest fill pumps).

- All exceptions to the required setbacks must be approved by the environmental inspector.

In these situations, the Contractor shall exercise extreme caution during fueling and lubrication of equipment and all other oil and hazardous materials transfers.

2.3.5 Equipment for Safe Tank Operation

Tanks will be equipped with all standard safety equipment required for the specification packaging and its use.

2.3.6 Separation of Incompatible Materials

Incompatible materials will be stored in areas separated in accordance with nationally recognized standards. Incompatible materials will not be consecutively placed into a container or tank. In addition, sources of ignition will be prohibited in hazardous materials and wastes' areas.

2.3.7 Labeling, Marking and Placarding

Each cylinder, container and tank will be appropriately identified with contents as per OSHA requirements (see samples in Attachment B). Containers and tanks used for transport of hazardous materials and wastes will be marked and labeled in accordance with U.S. DOT requirements (e.g., Proper Shipping Name, UN/NA Number, Hazard Class labels or placards). In addition, tanks will be labeled in accordance with National Fire Protection Association (NFPA), where required by the local jurisdiction.

Approved areas for hazardous materials and waste will be secured against unauthorized entry and vandalism.

2.4 SECONDARY CONTAINMENT

2.4.1 Approved Secondary Containment

Approved secondary containment will provided for each tank and each container with a capacity of 5 gallons or more.

2.4.2 Minimum Standards for Secondary Containment

Minimum standards for secondary containment are as follows:

2.4.2.1 Containers

Secondary containment for containers with 5 or more gallons capacity may include: a temporary containment area with temporary earthen berms and contiguous 10 mil polyethylene containment; or it may consist of a portable containment system constructed of PVC or other suitable material.

Secondary containment volume will be at least 110 percent of the aggregate volume of hazardous materials and wastes stored.

2.4.2.2 Tanks

Secondary containment for tanks will be provided that includes tank and the dispensing area.

Secondary containment volume will be 110 percent of the volume of the largest tank of hazardous materials and wastes stored. Tanks should be elevated a minimum of 2 feet above grade.

2.4.2.3 Contractor's Secondary Containment

Secondary containment provided by the Contractor must meet these minimum standards and must be implemented as proposed in the Contractor's Hazardous Materials and Waste Management Plan.

2.5 REGULAR INSPECTIONS

Contractor will conduct regular inspections at locations where hazardous materials and wastes are stored, handled and dispensed. Inspections will follow site-specific procedures in the approved Contractor's Hazardous Materials and Waste Management Plan. Inspections to include availability of emergency response equipment.

The source of any container or tank leak will be stopped immediately and residual wastes will be aggregated, designated and properly disposed of. Any leaking container will be immediately overpacked.

All vehicles (e.g., trucks, side-booms, dozers, etc.) shall be:

- inspected daily for leaks or signs of deterioration which could result in a leak;
- repaired when defective tanks, hoses, fittings, etc. are found; and
- parked at least 100 feet from waterbodies or wetlands, with certain exceptions noted above (see Setback Exceptions, Section 2.3.4).

The EI will provide oversight to Contractor's activities on hazardous materials and waste management.

3.0 EMERGENCY PREPAREDNESS

Each Contractor is required to develop a Contractor's Emergency Response Plan (ER Plan, Attachment C) for environmental emergency preparedness and response. The Plan is appropriate for the hazardous materials and wastes used and generated. The initial ER Plan will be approved by the CI. This ER Plan will be maintained current: subsequent revisions may be approved by the EI.

Contractor will maintain adequate resources, including:

- Emergency response coordinators;
- Fire-fighting equipment (such as portable fire extinguishers);
- Spill control and cleanup equipment (absorbent materials such as pads, pillows, booms and socks, non-sparking shovels, etc.);
- Appropriate personal protective equipment; and,
- Contractor's ER Plan.

3.1 EMERGENCY RESPONDERS

Contractor will designate personnel responsible for incident or emergency response, in the event of a release to the environment. Contractor will ensure that emergency responders identified will have appropriate training in environmental emergency or incident preparedness, prevention and response. Contractor's emergency contact information will be maintained current.

In addition, North Baja will designate primary and secondary emergency response coordinators. North Baja emergency response coordinators will have the have the authority to commit necessary resources to respond to environmental releases and to conduct cleanup.

3.2 EMERGENCY RESPONSE EQUIPMENT

3.2.1 Contractor's Spill Containment and Cleanup Resources

3.2.1.1 On-site Equipment

Contractor will have available, adequate spill containment and cleanup resources that are appropriate to their activities and to the hazardous materials and wastes handled. Minimum standards are identified on Attachment C. The following additional materials will be available at a central location on each construction spread:

- Boom(s)

- Cleanup rags
- 55-gallon DOT-approved containers
- Replacement parts and equipment for repair of tanks, hoses, nozzles, etc.
- Fire extinguisher, Type: B, C
- Two bags of chemical sorbent material (i.e. kitty litter)
- Three 17" x 17" chemical pillows
- Four 48" x 3" chemical socks
- Twenty 18" x 18" x 3/8" sorbent pads
- Twenty 30-gallon 6-mil polyethylene bags
- Two 30-gallon polyethylene open-head drums
- Ten pair polypropylene gloves
- Two, each type, waste labels
- Two 8' x 10' polyethylene tarps
- One cooler
- One quart jar
- One trowel
- Twenty hay bales

Contractor will be prepared to clean up, characterize and dispose of spill debris. North Baja will have additional contractors available for associated emergency spill response, transportation, remediation and disposal activities.

3.2.1.2 Vehicle Response Equipment

The Contractor will maintain a supply of spill materials as follows:

- Any vehicle used to transport lubricants and fuel will be equipped with:
  - One 20-pound fire extinguisher (Type: B, C)
  - 50 pounds of oil absorbent (e.g., Speedy Dry or equivalent)
  - Ten 48" x 3" oil socks
  - Five 17" x 17" oil pillows
  - Two 10' x 4" oil booms
  - Twenty 24" x 24" x 3/8" oil absorbent pads
  - Twenty 30-gallon 6-mil polyethylene bags
  - One roll of 10-mil plastic sheeting
  - Two shovels
  - Ten pair of polypropylene gloves
  - One 55-gallon (or equivalent capacity) DOT-approved container
  - Two, each type, waste label

- All foremen's vehicles and heavy equipment will be equipped with:
  - Absorbent pads
  - Heavy duty plastic bags
  - One shovel

3.2.2 Maintaining Emergency Response Equipment

Contractor will inspect emergency response equipment weekly to ensure that all equipment identified in the Contractor's ER Plan is available in quantities and locations identified. After response to an incident or emergency release, any equipment used will be replaced or decontaminated and returned to inventory.

4.0 INCIDENT OR EMERGENCY RESPONSE

4.1 ENVIRONMENTAL RELEASE NOTIFICATION

Contractor will notify the North Baja Emergency Response Coordinator on call of each spill. There will be immediate notification in the event of a release of one pound or more of any hazardous material or any amount of hazardous waste.

If agency notification is required, North Baja Representatives will notify the PM and appropriate agencies in accordance with North Baja Policies.

4.2 ENVIRONMENTAL RELEASE RESPONSE ACTIONS

In the event contaminated groundwater or contaminated soils are encountered as evidenced by refuse and/or other debris in the pipeline trench, discoloration, odor, or other signs along the pipeline route, the area will be inspected prior to any further construction activity. Field observations will be conducted to determine the nature of the contamination. The Contractor's Emergency Response Coordinator will provide details available on the spill, including the material or waste involved, its quantity and location to the North Baja Emergency Response Coordinator.

The North Baja Emergency Response Coordinator will verify the nature of the material released, its source and amount, the aerial extent of the release and will determine whether an incident or an emergency release has occurred. The North Baja Emergency Response Coordinator will assess potential hazards to human health and the environment. Appropriate agencies, including the CRWQCB, Colorado River Basin, Region 7, and the Riverside and Imperial Counties Departments of Health would be contacted to determine how the contaminated medium should be handled.

4.2.1 Incident Response

If the environmental release is an incident that can be handled with available resources, Contractor may be requested to perform the following, under direction of the North Baja Emergency Response Coordinator:

- Stop the source of release. This may mean plugging a container or tank, turning off a valve, etc.
- Contain the spill. Use approved container. Or create a lined, covered containment area.

- Collect spilled materials. Block off drains. Create/expand containment areas using available means. Use appropriate neutralizers, sorbents, pigs and pads. Create barriers to protect sensitive areas.
- Remove all contaminated soil or other material.
- Contain contaminated material and temporarily store in a secured area.
- Perform any necessary sampling of waste material.
- Conduct preliminary clean-up of the site.

4.2.2 Emergency Response

The Emergency Response Coordinator will act as Incident Commander, overseeing emergency release response actions taken.

If additional resources are needed, the North Baja Emergency Response Coordinator will retain emergency response contractors and/or request assistance of local emergency responders (including fire, police, HAZMAT teams, ambulance or hospitals and highway patrol) and will coordinate all emergency response activities. As necessary, the North Baja Emergency Response Coordinator will signal evacuation of site personnel.

Where site cleanup is necessary, North Baja Emergency Response Coordinator will coordinate cleanup actions with appropriate agency representatives. North Baja Representatives will provide guidance on appropriate waste management and disposal.

The Governor's Office of Emergency Services, California State Warning Center (916-845-8911) (Warning Center) serves as the coordinator of spill response in the State of California. The Warning Center determines the severity of spills and contacts the appropriate agency. Local emergency response contact—some of which are listed below—also are provided in the event that a spill involves injuries or fire. The Resource Center also maintains an up-to-date list of approved disposal facilities to accept spill-related contaminated and clean-up materials. Likewise, the Emergency Response Duty Office of the Arizona Department of Environmental Quality (602-771-2330) provides assistance regarding the proper handling and disposal methods consistent with State and Federal regulations, as well as a database containing approved disposal facilities.

Provided in the table below is a list of State and local agencies that will be contacted in the event of a hazardous materials spill. The names of the individuals will be identified prior to construction to ensure that the list is up-to-date. This information will be incorporated into the SPCC Plan for Hazardous Materials and Wastes.

State Spill/Release Response Contacts

Contact Name	Agency	Location (City/State)	Telephone Number
Arizona			
	La Paz County Sheriff	City of Parker, AZ	(928) 669-6141
	Yuma County Sheriff (District 2, Westside)	Yuma, AZ	(928) 782-3192
	City of Yuma Police Department Main Dispatch	Yuma, AZ	(928) 783-4421
	Yuma Regional Medical Center Main Number	Yuma, AZ	(928) 344-2000

State Spill/Release Response Contacts

Contact Name	Agency	Location (City/State)	Telephone Number
	California		
	Riverside County Sheriff Blythe Station	Blythe, CA	(760) 921-7900
	Riverside County Highway Patrol	Blythe, CA	(760) 922-6141
	Blythe Fire Department	Blythe, CA	(760) 922-6116
	Blythe Ambulance Service	Blythe, CA	(760) 922-8460
	Palo Verde Hospital	Blythe, CA	(760) 922-4115
	Riverside County Emergency Response	Blythe, CA	(760) 921-7861
	Riverside County Office of Emergency Services (8 AM – 5 PM)	Riverside, CA	(951) 955-4700
	Imperial County Office of Emergency Services	Imperial, CA	(760) 355-1191
	Imperial County Police Department	Imperial, CA	(760) 355-4327
	Imperial County Sheriff	El Centro, CA	(760) 339-6311
	Colorado River Basin Regional Water Quality Control Board	Palm Desert, CA	(760) 346-7491

5.0 TRAINING

A pre-construction meeting will be held between Contractor and North Baja Representatives to review responsibilities and requirements that include waste minimization, hazardous materials and waste management, emergency preparedness and prevention, incident and emergency response identification and response planning and coordination. Furthermore, all EIs and CIs will receive a copy of the SPCC Plan prior to construction.

During construction, the EI will conduct spill refresher briefings with the construction crews that will include the following:

- Precautionary measures to prevent spills;
- Potential sources of spills, such as equipment failure, malfunction, or leaks;
- Standard operating procedures in case of a spill;
- Applicable notification procedures;
- Equipment, materials and supplies available for a cleanup of a spill; and
- List of known spill events.

Prior to reporting to the job site, each person must be trained on the contents and on the implementation of this SPCC Plan. This training may be integrated into North Baja's Environmental Training Program.

6.0 REFERENCES

Nationally recognized standards may include but are not limited to NFPA, Uniform Fire Code (UFC), U.S. DOT and CHP, and state-specific requirements of Arizona Administrative Code and California Code of Regulations.

ATTACHMENTS

ATTACHMENT A

CONTRACTOR'S HAZARDOUS MATERIALS AND WASTE MANAGEMENT PLAN FORMS PARTS I AND II

CONTRACTOR'S HAZARDOUS MATERIALS AND WASTE MANAGEMENT PLAN:
PART I
HAZARDOUS MATERIALS MANAGEMENT

File 5.11

NBX Project: Description:

Chief Inspector's Name:

Tel. No./Location:

NBX Project Number/ Accounting :

Contractor: Firm Name:

Contact Name/Tel. No.:

Address:

Project Dates:

Number of Contractor Personnel On-site:

Work Schedule:

HAZARDOUS MATERIALS			*STORAGE AND HANDLING PROCEDURES*						
Material Name	Manufacturer	MSDS Reference (Attach)	Estimated Quantity Needed for Job (Units)	Quantity On-Site (Units)	Location(s) at Job Site	Marking/ Labeling/ Placarding (Discuss or Attach)^{4}	Tank/ Container Size(s)/ Type(s)	Secondary Containment (Discuss or Attach^{2})	Inspection Procedure (Discuss or Attach^{3})

Comments:

Attachments:

[1] Provide MSDSs.

[2] Describe secondary containment for containers of 5 gallons or more capacity.

[3] Describe inspection procedures.

[4] Describe tank/drum marking, labeling and placarding procedures.

CONTRACTOR'S HAZARDOUS MATERIALS AND WASTE MANAGEMENT PLAN:

PART II

HAZARDOUS, UNIVERSAL AND SPECIAL WASTE and RECYCLABLE HAZARDOUS MATERIALS MANAGEMENT

File 5.11

WASTE DESCRIPTION[1]		WASTE ACCUMULATION AND HANDLING PROCEDURES				
Waste Type and Description	Estimated Monthly Generation Quantity/Unit(s)	Accumulation Area Location(s)[2] On-Site	Tank/Container Size(s)/Type(s)	Marking/ Labeling/ Placarding (Discuss or Attach)[3]	Secondary Containment (Discuss or Attach)[4]	Inspection Procedure (Discuss or Attach)[5]

Process Generating Waste (s):

Contractor's Staging Point Location (Rights-of-way work site only):

Comments:

Attachments:

[1] If Contractor intends to completely use or re-use hazardous materials on-site or off-site and no hazardous waste will be generated, please discuss.

[2] Note: Locations may be established on site during mobilization.

[3] Describe tank/drum marking, labeling and placarding procedures.

[4] Describe secondary containment for containers of 5 gallons or more capacity.

[5] Describe inspection procedures, inspection frequency, title of inspector.

Distribution:	Original:	Informational Copies:	Revision Date (by Contractor):
	Chief Inspector/NBX File	NBX Environmental Inspector: __________	
		Safety-Training: _____________	
		Others: ______________	

ATTACHMENT B

LABELS FOR WASTE CONTAINERS

Including:

"Materials Identification Label" (all containers)

"Recyclable Material/Waste" Container Label

Hazardous Waste "Workplace Accumulation Container" Label

"Used Oil" Container Label

"MATERIALS IDENTIFICATION LABEL" (all containers)

North Baja Expansion Project		
MATERIALS IDENTIFICATION LABEL		
North Baja Expansion Project:	Description:	
	Facility/Location:	
	Chief Inspector:	
	Environmental Inspector:	
	NBX Project Number/Account:	
Contractor:	Contractor Name:	
	Environmental Contact Name:	
	Telephone No.:	
Process:		
Materials Description:	Quantity:	____pounds ____gallons
Container Type (drum, tank, etc.):	Container Location:	
Container Number:	Date of Accumulation:	
Status of Material: (if sampling and analysis are required)	Sample Number:	
	Sample Date:	
	Analytical Laboratory:	
	Analysis Date:	
	Report Date:	
	Analytical Results:	

"RECYCLABLE MATERIAL/WASTE" CONTAINER LABEL

North Baja Expansion Project

RECYCLABLE MATERIAL/WASTE LABEL

Facility Name: ____________________

Address: ____________________

State/Zip: ____________________

Contact: ____________________

Type: ☐ **USED OIL**

UNIVERSAL WASTE:

- ☐ Universal Waste – Batteries
- ☐ Universal Waste – Lamps
- ☐ Universal Waste – Mercury Thermostats

☐ **SPECIAL WASTE**

☐ **RECYCLABLE MATERIAL**

Description: ____________________

Accumulation Date: ____________________

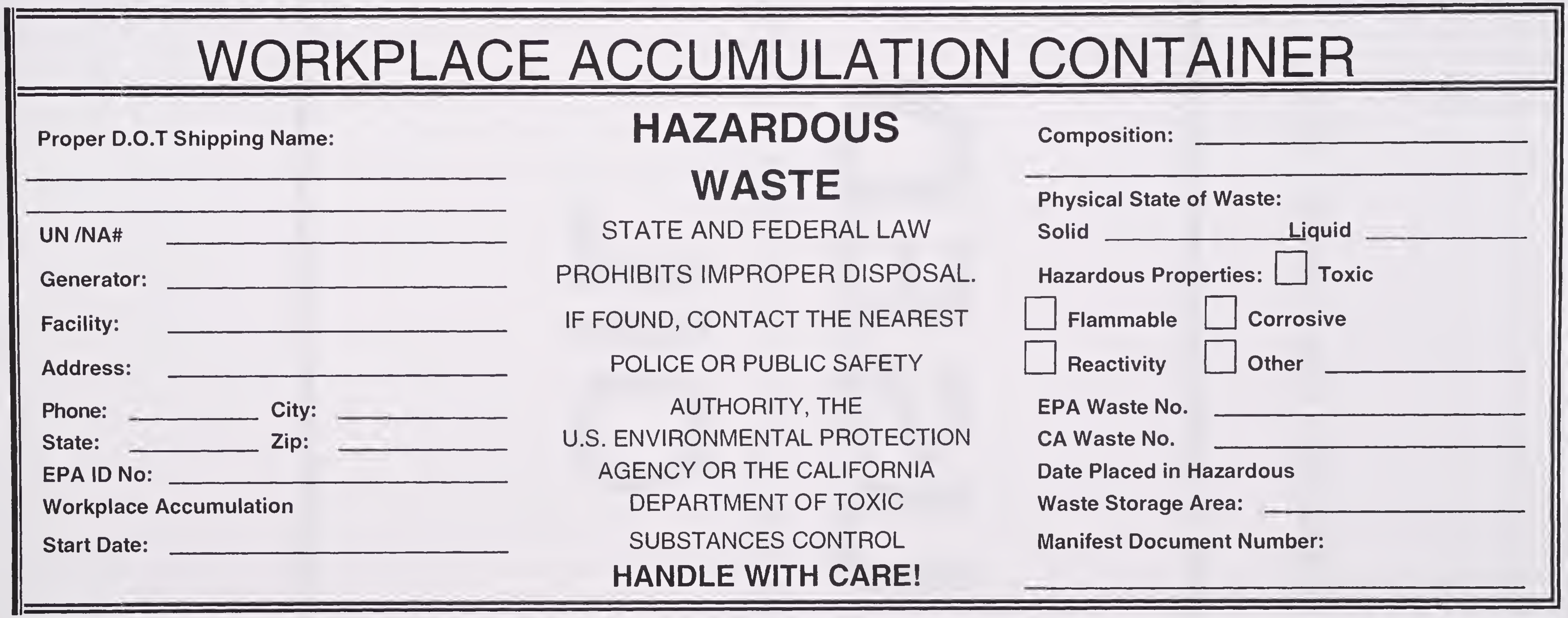
DOT Proper Shipping Name: ____________________

____

____

UN/NA Number: ____________________

HAZARDOUS WASTE "WORKPLACE ACCUMULATION CONTAINER" LABEL



WORKPLACE ACCUMULATION CONTAINER

Proper D.O.T Shipping Name: ____________________

____

UN /NA# ____________________

Generator: ____________________

Facility: ____________________

Address: ____________________

Phone: __________ **City:** __________

State: __________ **Zip:** __________

EPA ID No: ____________________

Workplace Accumulation

Start Date: ____________________

HAZARDOUS

WASTE

STATE AND FEDERAL LAW

PROHIBITS IMPROPER DISPOSAL.

IF FOUND, CONTACT THE NEAREST

POLICE OR PUBLIC SAFETY

AUTHORITY, THE

U.S. ENVIRONMENTAL PROTECTION

AGENCY OR THE CALIFORNIA

DEPARTMENT OF TOXIC

SUBSTANCES CONTROL

HANDLE WITH CARE!

Composition: ____________________

____

Physical State of Waste:

Solid __________ **Liquid** __________

Hazardous Properties: ☐ **Toxic**

☐ **Flammable** ☐ **Corrosive**

☐ **Reactivity** ☐ **Other** __________

EPA Waste No. ____________________

CA Waste No. ____________________

Date Placed in Hazardous

Waste Storage Area: ____________________

Manifest Document Number:

____

"USED OIL" CONTAINER LABEL

USED

OIL

ATTACHMENT C

Contractor's Emergency Response Plan Form

CONTRACTOR'S EMERGENCY RESPONSE PLAN

File 5.11

NBX SPCC/Emergency Response Plan Reviewed: (Y/N)

Emergency Response Coordinator

Name	Title	Telephone (Office/Job Site)	Address
Primary			
Secondary			

Incident/Emergency Response Equipment

Emergency Response Equipment	Type	Capability	Quantity	Location
Fire Fighting	Fire Extinguishers	Type: B, C?		Jobsite Crew Staging Area
Incident Response Kit	Chemical sorbent material (e.g., kitty litter)	Chemical Spill Response	2 bags	Project Staging Area
	17" x 17" chemical pillows	"	3	"
	48" x 3" chemical socks	"	4	"
	Sorbent pads 18" x 18" x 3/8"	"	20	"
	6 mil polyethylene bags	"	20, 30-gal.	"
	Polyethylene open-head drum	"	2, 30-gal.	"
	Polypropylene gloves	"	10 pair	"
	Waste Labels	"	2 Each	"
	8' x 10' Polyethylene Tarp	"	2	"
Release Response Kit	48"x3" oil socks	Fuel/Oil Spill Response	10	Each Fuel/Oil Truck
	17" x 17" oil pillows	"	5	"
	10' x 4" oil boom	"	2	"
	24" x 24" x 3/8" oil mats	"	20	"
	6 mil polyethylene bags	"	20, 30-gal.	"
	Polypropylene Gloves	"	10 pair	"
	Propylene open-head drum	"	1, 55-gallon	"
	Waste Labels	"	2 Each	"
Sample Kit	Cooler, Quart Jars, Trowel	Sampling of solids	1	Project Staging Area
Spill Containment	8' x 10' Polyethylene Tarp	Contain Spill Debris	2	Project Staging Area
	Hay Bales	"	20	"

Evacuation Procedures

Distribution:	Original:	Informational Copies:
	Chief Inspector/NBX File	NBX Environmental Inspector: ___________
		Safety-Training: _______________
		Others: ________________

Revision Date (by Contractor):	

ATTACHMENT D

SITE MAPS

Site Maps will be provided at the time of construction.

ATTACHMENT E

Table 1

Waste Cross-Reference

Use "Waste Cross-Reference" Table in conjunction with Exhibit 5, Table 2 for the proper identification, designation, labeling, and management of Hazardous Wastes, Universal Wastes, Special Wastes and Recyclable Hazardous Materials.

Table 2

Waste Quick Reference Guide and Waste Designations for Hazardous Wastes, Universal Wastes, Special Wastes, and Recyclable Hazardous Materials including Used Oil

Note for Sites Located Within the State of California.

Where a California Waste Code is indicated in Column 5, the waste must be managed (i.e., use of hazardous waste label, California Uniform Hazardous Waste Manifest, etc.) as a hazardous waste at the point of generation.

TABLE 1

WASTE CROSS-REFERENCE

WASTE GENERATED:	CROSS-REFERENCE TO Table 2 : *WASTE QUICK REFERENCE GUIDE:*	COMMENT OR DESIGNATION, IF NOT REGULATED:
Acid, Muriatic or Hydrochloric Acid (used at 1 part of 0.4% hydrochloric acid to 20 parts water)		At dilutions with water > 10 times: Non-Regulated Waste.
Adhesives/Sealants		Non-Regulated Waste if completely used. Otherwise, contact EC staff.
Aerosol Spray Cans/Containers	Aerosol Cans.	
AFFF	Aqueous Film Forming Foam by 3M Co.	
Alkaline Batteries	Batteries, Alkaline.	
Ambitrol	Glycol, Propylene.	
Antifreeze	Glycol, Ethylene. Glycol, Propylene.	
Asbestos	Asbestos.	
Automatic Fire Fighting Foam	Aqueous Film Forming Foam by 3M Co.	
Automatic Transmission Fluid	Used Oil.	
Automotive Antifreeze	Glycol, Ethylene. Glycol, Propylene.	
Automotive Batteries	Batteries, Lead Acid: Destined for Recycling. Batteries, NiCad, Electric Storage Type, Gel Cell.	
Automotive Filters	Filters Containing Fuel. Oily Solids, Motor Vehicle Filters, Not Hot-Drained and Punctured.	
Automotive Lubricating Oil	Used Oil.	
Batteries, Alkaline	Batteries, Alkaline.	
Batteries, Debris	Batteries, Debris From Corrosive Batteries.	
Batteries, Dry-Cell	Batteries: *refer to constituents.*	
Batteries, Gel Cell	Batteries, Lead Acid: Destined for Recycling. Batteries, NiCad, Electric Storage Type, Gel Cell.	
Batteries, Lead Acid	Batteries, Lead Acid: Destined for Recycling.	
Batteries, Lithium	Batteries, Lithium.	
Batteries, Mercury	Batteries, Mercury.	
Batteries, Nickel Cadmium (NiCad)	Batteries, NiCad, Household Type. Batteries, NiCad, Electric Storage Type, Gel Cell.	
Batteries, Potassium Hydroxide	Batteries, Alkaline.	
Batteries, Wet-Cell	Batteries, Lead Acid: Destined for Recycling.	
Brake Fluid (Automotive)	Used Oil.	
Brake Pads, Containing Asbestos	Asbestos.	
Brake Pads, Not Containing Asbestos		Non-Regulated Waste.
Carburetor Cleaner	Solvent, Safety-Kleen Immersion Cleaner #699 (Carburetor Cleaner).	Others may also be Hazardous Waste.
Chemical Cleaners	Solvent, Fyre Wash and Water. Oil With Water and Sediment.	ZOC 27 Wash water is Non-Regulated Waste.
Chemical Toilet Wastes		Handled by Contractor.
Chips (From Painted Materials)	Paint Chips and Debris: *segregated by lead content.*	
Coatings, Oil-Based	Paint, Oil-Based.	
Communications Batteries	Batteries, Lead Acid: Destined for Recycling. Batteries, NiCad, Electric Storage Type, Gel Cell.	
Construction Materials (Cement, Wood, Metal, Glass, and Rubber)	*Refer also to specific regulated wastes listed.*	Non-Regulated Waste.

TABLE 1

WASTE CROSS-REFERENCE

WASTE GENERATED:	CROSS-REFERENCE TO Table 2 : *WASTE QUICK REFERENCE GUIDE:*	COMMENT OR DESIGNATION, IF NOT REGULATED:
Corrosion Inhibitors	Glycol, Propylene.	
Crankcase Oil	Used Oil.	
Degreasers	Solvent, Safety-Kleen Immersion Cleaner #699 (Carburetor Cleaner). Solvent With Flash Point of > 141° F. Solvent With Flash Point of <= 141° F. Solvent Aerosols.	
Demolition Wastes (Earth, Rock, Concrete, Asphalt, Plastics, Wood, Sheet Rock)	Asbestos.	Other Demolition Wastes: Non-Regulated Waste.
Diesel Filters (Motor Vehicle or Fuel Tank)	Filters Containing Fuel.	
Diesel Fuel	Fuel, Diesel.	
Diesel Fuel Contaminated Solid Waste	Fuel, Diesel, Contaminated Solid Waste. *Refer also to* Filters Containing Fuel.	
Drums, Empty	Empty Drums, Containing < 1" of Material or Waste.	
Dry Cell Batteries	Batteries: r*efer to constituents.*	
Electrosol	Solvent Aerosols.	
Elemental Mercury	Mercury, Liquid, and Mercury Devices, Including Thermometers and Switches.	
Empty Containers	Aerosol Cans. Pesticide Aerosols. Solvent Aerosols.	Other Empty Containers are Non- Regulated Waste.
Empty Drums	Empty Drums, Containing < 1" of Material or Waste.	
Empty Paint Cans	*Refer to* Aerosol Cans.	Other Empty Containers are Non- Regulated Waste.
Empty Pesticide and Herbicide Containers	*Refer to* Pesticide, Aerosols.	Not Regulated if completely used, including rinsate. Larger quantities are applied and managed by licensed contractors.
Epoxy (Components)		Non-Regulated Waste if completely used. Otherwise, contact EC staff.
Equipment Oil Filters	Oily Solids, Equipment Oil Filters, With Textile Filter. *Refer also to* Filters Containing Fuel.	
Ethylene Glycol	Glycol, Ethylene.	
Film, X-Ray		May be recycled as a Hazardous Material.
Filters Containing Fuel	Filters Containing Fuel.	
Filters Containing Oil	Oily Solids, Motor Vehicle Filters, Not Hot-Drained and Punctured.	
Fluorescent Tubes (Containing Mercury)	Mercury Lighting Waste: *refer to state where waste is generated.*	
Food and Beverage Containers and Scraps		Non-Regulated Waste.
Fuel Filters (Motor Vehicle or Fuel Tank)	Filters Containing Fuel. *Refer also to* Oily Solids, Equipment Oil Filters, With Textile Filter.	
Fuel With Water	Fuel, Diesel. Fuel, Gasoline. Fuel, Kerosene.	
Fuel, Diesel	Fuel, Diesel.	

TABLE 1

WASTE CROSS-REFERENCE

WASTE GENERATED:	CROSS-REFERENCE TO Table 2 : *WASTE QUICK REFERENCE GUIDE:*	COMMENT OR DESIGNATION, IF NOT REGULATED:
Fuel, Diesel, Contaminated Solid Waste.	Fuel, Diesel, Contaminated Solid Waste. *Refer also to* Filters Containing Fuel.	Small quantities with < 200 ppm diesel are not regulated if no water bodies impacted.
Fuel, Gasoline	Fuel, Gasoline.	
Fuel, Gasoline, Contaminated Solid Waste.	Fuel, Gasoline, Contaminated Solid Waste. *Refer also to* Filters Containing Fuel.	Small quantities with < 100 ppm gasoline are not regulated if no water bodies impacted.
Fuel, Kerosene	Fuel, Kerosene.	
Gas Generator Oil	Used Oil.	
Gaskets (Cork or Rubber, Unsaturated)		Non-Regulated Waste.
Gasoline	Fuel, Gasoline.	
Gasoline Contaminated Solid Waste	Fuel, Gasoline, Contaminated Solid Waste. *Refer also to* Filters Containing Fuel.	
Gasoline Filters (Motor Vehicle or Fuel Tank)	Filters Containing Fuel.	
Gear Oil	Used Oil.	
Gel Cell Batteries	Batteries, Lead Acid: Destined for Recycling. Batteries, NiCad, Electric Storage Type, Gel Cell.	
Glycol, Ethylene	Glycol, Ethylene.	
Glycol, Propylene	Glycol, Propylene.	
Grease Gun Cartridge (Empty)		Non-Regulated Waste.
Herbicides and Growth Suppressants	*Refer to* Pesticide, Aerosols.	Larger quantities are applied and managed by licensed contractors.
Hydraulic Fluid	Used Oil.	
Hydrochloric Acid (used at 1 part of 0.4% hydrochloric acid to 20 parts water)		At dilutions with water > 10 times: Non-Regulated Waste.
Immersion Cleaner	Solvent, Safety-Kleen Immersion Cleaner #699 (Carburetor Cleaner).	
Insecticides	*Refer to* Pesticide, Aerosols.	
Isopropyl Alcohol		When diluted for de-icing, Non-Regulated Waste.
Kerosene	Fuel, Kerosene.	
Lacquer Thinner	Paint Thinner (Naphtha).	
Lamps (Containing Mercury)	Mercury Lighting Waste: *refer to state where waste is generated.*	
Lead Acid Batteries	Batteries, Lead Acid: Destined for Recycling.	
Light Ballasts (PCB-Contaminated)	Polychlorinated Biphenyls (PCBs): Light Ballasts With PCBs.	Fluorescent light ballasts manufactured before 1979 or which are not labeled “No PCBs” are suspect.
Lithium Batteries	Batteries, Lithium.	
Lubricating Oil	Used Oil.	
Mercury Batteries	Batteries, Mercury.	
Mercury Debris (With >= 0.2 ppm Mercury)	Mercury Debris.	
Mercury, Elemental or Liquid	Mercury, Liquid, and Mercury Devices, Including Thermometers, Barometers, Manometers, Thermowells and Switches.	
Mercury Lamps	Mercury Lighting Waste: *refer to state where waste is generated.*	
Mercury Lighting Waste	Mercury Lighting Waste: *refer to state where waste is generated.*	

TABLE 1

WASTE CROSS-REFERENCE

WASTE GENERATED:	CROSS-REFERENCE TO Table 2 : WASTE QUICK REFERENCE GUIDE:	COMMENT OR DESIGNATION, IF NOT REGULATED:
Mercury Switches	Mercury, Liquid, and Mercury Devices, Including Thermometers, Barometers, Manometers, Thermowells and Switches.	
Mercury Thermostats	Mercury Thermostats.	
Methanol	Methanol.	
Microwave Station Batteries	Batteries, Lead Acid: Destined for Recycling. Batteries, NiCad, Electric Storage Type, Gel Cell.	
Motor Oil	Used Oil.	
Motor Vehicle Filters Containing Gasoline	Filters Containing Fuel.	
Motor Vehicle Filters Containing Oil	Oily Solids, Motor Vehicle Filters, Not Hot-Drained and Punctured.	
Muriatic Acid (used at 1 part of 0.4% hydrochloric acid to 20 parts water)		At dilutions with water > 10 times: Non-Regulated Waste.
NiCad Batteries	Batteries, NiCad, Household Type. Batteries, NiCad, Electric Storage Type, Gel Cell.	
Non-Saturated Oily Rags and Absorbents	*Refer to* Shop Rags—Oily, Laundered.	
Odorant Rags and Debris	Odorant Rags and Debris.	
Odorants	Odorant Liquids.	
Office Products	*Refer to* Toner and Cartridges *below*.	Office products other than toner and cartridges are Non-Regulated Wastes.
Oil Filters (Equipment)	Oily Solids, Equipment Oil Filters, With Textile Filter.	
Oil Filters (Metal, Drained)		Recyclable Waste
Oil Filters, (Metal, Not Drained)	Oily Solids, Motor Vehicle Filters, Not Hot-Drained and Punctured.	
Oil Sorbents (Saturated)	Oily Pigs and Pads.	
Oil With Water	Oil With Water and Sediment.	
Oil-Based Paints	Paint, Oil-Based.	
Oil-Saturated Soil and Gravel	Oily Solids: Gravel, Soil.	
Oily Parts Without Free-Standing Oil		Non-Regulated Waste, Possibly Recyclable.
Oily Pigs and Pads	Oily Pigs and Pads.	
Oily Rags (Laundered)	Shop Rags—Oily, Laundered.	
Oily Rags (Saturated)	Oily Pigs and Pads.	
Oily Sludge	Oily Sludge.	
Oily Solids	Oily Pigs and Pads. Oily Sludge. Oily Solids, Equipment Oil Filters, With Textile Filter. Oily Solids: Gravel, Soil. Oily Solids, Motor Vehicle Filters, Not Hot-Drained and Punctured. Shop Rags—Oily, Laundered.	
Oily Solids, Equipment Oil Filters	Oily Solids, Equipment Oil Filters, With Textile Filter.	
Oily Solids, Motor Vehicle Filters, Not Hot-Drained and Punctured	Oily Solids, Motor Vehicle Filters, Not Hot-Drained and Punctured.	
Paint and Coatings, Oil-Based	Paint, Oil-Based. Refer also to Aerosol Cans.	
Paint Chips	Paint Chips and Debris: s*egregated by lead content.*	

TABLE 1

WASTE CROSS-REFERENCE

WASTE GENERATED:	CROSS-REFERENCE TO Table 2 : *WASTE QUICK REFERENCE GUIDE:*	COMMENT OR DESIGNATION, IF NOT REGULATED:
Paint Containers (With Paint Remaining)	Paint, Oil-Based. Paint, Water-Based. Refer also to Aerosol Cans.	Not regulated if completely used. Otherwise, contact EC staff.
Paint Stripper, Corrosive (e.g., Peel Away 1, ST-1)	Paint Stripper, Corrosive.	
Paint Thinner	Paint Thinner (Naphtha).	
Paint, Oil-Based	Paint, Oil-Based.	
Paint, Water-Based	Paint, Water-Based. Paint, Water-Based (Corrosive). *Refer also to* Aerosol Cans.	
Paper Products (Packing, Boxes, Paper, etc.)		Recyclable Non-Regulated Waste.
PCB-Contaminated Wastes	Polychlorinated Biphenyls (PCBs): Scrubber Oil With 1-50 ppm PCBs. Polychlorinated Biphenyls (PCBs): Light Ballasts With PCBs.	
Penetone 19 With Water	Oil With Water and Sediment.	Diluted 9 parts water to 1 part Penetone 19, used as a turbine wash.
Pesticides	Aerosol Cans, Flammable and Non-flammable.	Larger quantities are applied and managed by licensed contractors.
Petroleum Oil	Used Oil.	
Photo Developing Waste		Handled by Contractor.
Pipeline Liquids	Used Oil.	
Pipeline Sludge, Non-Oily		Non-Regulated Waste.
Pipeline Sludge, Oily	Oily Sludge.	
Polychlorinated Biphenyls (PCBs): Scrubber Oil With 1-50 ppm PCBs	Polychlorinated Biphenyls (PCBs): Scrubber Oil With 1-50 ppm PCBs.	
Polychlorinated Biphenyls (PCBs): Light Ballasts With PCBs.	Polychlorinated Biphenyls (PCBs): Light Ballasts With PCBs.	Fluorescent light ballasts manufactured before 1979 or which are not labeled “No PCBs” are suspect.
Propylene Glycol	Glycol, Propylene.	
Rags, Oily	Oily Pigs and Pads. Shop Rags—Oily, Laundered.	
Rags, Solvent	Shop Rags—Solvent, Laundered.	
Rubbish (Paper, Cloth, Tin, Cardboard, Glass)		Non-Regulated Waste.
Rust Inhibitors	Paints, Oil-Based.	
Sand Blasting Waste	*Refer to* Paint Chips and Debris: *segregated by lead content.*	Sand Blasting Media, as purchased, is Non-Hazardous. Material blasted may be hazardous.
Scrap Metal (Shavings, Pipe, Parts, Welding Rods, Tools Without Standing Petroleum Liquids)		Non-Regulated if Recycled.
Scrubber Oil	Used Oil.	
Scrubber Oil With 1-50 ppm PCBs	Polychlorinated Biphenyls (PCBs): Scrubber Oil With 1-50 ppm PCBs.	
Separator Sludge	Oily Sludge.	
Shop Rags—Oily, Laundered	Shop Rags—Oily, Laundered.	
Shop Rags—Solvent, Laundered	Shop Rags—Solvent, Laundered.	

TABLE 1

WASTE CROSS-REFERENCE

WASTE GENERATED:	CROSS-REFERENCE TO Table 2 : *WASTE QUICK REFERENCE GUIDE:*	COMMENT OR DESIGNATION, IF NOT REGULATED:
Solvent Aerosols (e.g., Electrosol)	Aerosol Cans, Flammable and Non-flammable.	
Solvent Containing Naphtha	Solvent, Safety-Kleen Immersion Cleaner #699 (Carburetor Cleaner). Solvent With Flash Point of <= 141° F. Solvent With Flash Point of > 141° F. Paint Thinner (Naphtha).	
Solvent, Fyre Wash and Water	Solvent, Fyre Wash and Water.	
Solvent, Safety-Kleen Immersion Cleaner #699 (Carburetor Cleaner)	Solvent, Safety-Kleen Immersion Cleaner #699 (Carburetor Cleaner).	
Solvent, Safety-Kleen Parts Washer	Solvent With Flash Point of > 141° F: *for 150 Solvent.* Solvent With Flash Point of <= 141° F: *for 105 Solvent.*	
Solvents	Solvent, Safety-Kleen Immersion Cleaner #699 (Carburetor Cleaner). Solvent With Flash Point of <= 141° F. Solvent With Flash Point of > 141° F. Solvent, Fyre Wash and Water. Paint Thinner (Naphtha)	
Spill Cleanup Debris	Oily Solids. Mercury Debris. Fuel, Diesel, Contaminated Solid Waste. Fuel, Gasoline, Contaminated Solid Waste.	
Stripper, Paint (e.g., Peel Away)	Paint Stripper (Corrosive).	
Surplus Chemicals		Non-Regulated Waste if completely used: Use/Reuse wherever possible.
Thermostats Containing Mercury	Mercury Thermostats.	
Thinner, Paint	Paint Thinner (Naphtha).	
Tires		Non-Regulated Waste.
Toner and Cartridges		Cartridges and Toner are returned to Vendor. Toner not returned to Vendor is hazardous waste.
Transmission Fluid	Used Oil.	
Turbine Lube Oil	Used Oil.	
Used Oil With Water	Oil With Water and Sediment	
Wash Water (With Petroleum Solvents)	Solvent, Fyre Wash and Water. *Refer to* Oil With Water, and Sediment.	
Wash Water (Without Petroleum Solvents)	*Refer to* Oil With Water, and Sediment.	ZOC 27 Wash water is Non-Regulated Waste.
Water-Based Paint	Paint, Water-Based. Paint, Water-Based (Corrosive).	
Weed Killer	Pesticide, Aerosols.	Larger quantities are applied and managed by licensed contractors.
Welding Rods		Non-Regulated Waste.
Wet Cell Batteries	Batteries, Lead Acid: Destined for Recycling. Batteries, NiCad, Electric Storage Type, Gel Cell.	
X-Ray Film		May be recycled as a Hazardous Material.

Table 2

Waste Quick Reference Guide

1. Waste Stream: Hazardous Materials or Waste Generated	2. Designation *Note 1*	3. Characteristic	4. EPA Waste Code (RCRA Waste)	5. State Waste Code (State Reference)	6. Waste Label	7. Waste Profile No. (TSD Ref.) *Note 2*	8. Proper Shipping Name *Note 3*	9. DOT Hazard Class/ Division	10. UN/NA Number	11. Packing Group *Note 4*	12. DOT Spec. Container *Note 5*	13. Label Indicating DOT Hazard Class	14. ERG No. *Note 6*	15. RQ, lbs. *Note 3* (total weight of: (1) listed constituent at/above concentration indicated; (2) of waste)
Aerosol Cans, Flammable and Non-Flammable	Hazardous Waste	I	D001	343 (CA)	Hazardous Waste	220715 (R)	Waste Aerosols, Flammable	2.1	UN1950	-	1A2/X or 1H2/Y	Flammable Gas	ERG #126	RQ = 100 lbs. of waste.
Aqueous Film Forming Foam by 3M Co. (3% AFFF With Water)	Special	-	-	343 (CA)	Recyclable Material/ Waste	219320 (R)	California Regulated Hazardous Waste Only (Water, 2-(2-Butoxyethoxy) Ethanol, Non-RCRA, Non-DOT)	-	-	-	1A1/X or 1A1/Y	-	-	-
Asbestos	Special	T (CA)	-	151 (CA)	Recyclable Material/ Waste, Special and Asbestos	340068 (R) (Non-Friable)	Asbestos	9	NA2212	III	1A2/X or 1H2/X or 6 mil Plastic	Class 9	ERG #171	RQ = 1 lb. of friable asbestos with a concentration of 20 ppm or greater.
Batteries, Alkaline, Containing Potassium Hydroxide: Household Type	Universal Waste	-	-	-	Recyclable Material/ Waste	335054 (R)	Batteries, Dry, Containing Potassium Hydroxide Solid. Note 7 EXEMPT: 40 CFR 273, Universal Waste—Batteries	8	UN3028	III	1A2/X or 1H2/Y	Corrosive	ERG #154	RQ = 1,000 lbs. of potassium hydroxide with a concentration of 2% or greater.
Batteries, Debris From Corrosive Batteries	Special	-	-	181 (CA)	Recyclable Material/ Waste	-	Corrosive Solids, N.O.S. (contains [acid/alkaline] batteries)	8	UN1759	III	1A2/X or 1H2/Y	Corrosive	ERG #154	-
Batteries, Lead Acid: Destined for Recycling.	Recyclable Hazardous Material	-	-	-	Recyclable Material/ Waste	335049 (R)	Batteries, Wet, Filled With Acid Note 7 EXEMPT: 40 CFR 266, Recycled lead acid batteries	8	UN2794	III	1H2/Y or 11G/Y	Corrosive	ERG #154	RQ = 1,000 lbs. of sulfuric acid with a concentration of 2% or greater; RQ = 10 lbs. of lead with a concentration of 200 ppm or greater.
Batteries, Lithium: Household Type	Universal Waste	-	-	-	Recyclable Material/ Waste	335056 (R)	Lithium Battery Note 7 EXEMPT: 40 CFR 273, Universal Waste—Batteries	9	UN3090	II	1A2/X or 1H2/Y	Class 9	ERG #138	-
Batteries, Mercury: Household Type	Universal Waste	-	-	-	Recyclable Material/ Waste	335051 (R)	Batteries, Dry, Containing Potassium Hydroxide Solid. Note 7 EXEMPT: 40 CFR 273, Universal Waste—Batteries	8	UN3028	III	1A2/X or 1H2/Y	Corrosive	ERG #154	RQ = 1 lb. of mercury, with a concentration of 20 ppm or greater.

Table 2

Waste Quick Reference Guide

1. Waste Stream: Hazardous Materials or Waste Generated	2. Designation *Note 1*	3. Characteristic	4. EPA Waste Code (RCRA Waste)	5. State Waste Code (State Reference)	6. Waste Label	7. Waste Profile No. (TSD Ref.) *Note 2*	8. Proper Shipping Name *Note 3*	9. DOT Hazard Class/ Division	10. UN/NA Number	11. Packing Group *Note 4*	12. DOT Spec. Container *Note 5*	13. Label Indicating DOT Hazard Class	14. ERG No. *Note 6*	15. RQ, lbs. *Note 3* (total weight of: (1) listed constituent at/above concentration indicated; (2) of waste)
Batteries, Nickel Cadmium: Electric Storage Type, Gel Cell	Universal Waste	-	-	-	Recyclable Material/ Waste	335053 (R)	Batteries, Wet, Non-Spillable Note 7 EXEMPT: 40 CFR 273, Universal Waste—Batteries	8	UN2800	III	1H2/Y or 11G/Y	Corrosive	ERG #154	RQ = 100 lbs. of nickel with a concentration of 2,000 PPM or greater; RQ = 10 lbs. of cadmium with a concentration of 200 ppm or greater.
Batteries, Nickel Cadmium: Household Type	Universal Waste	-	-	-	Recyclable Material/ Waste	335052 (R)	Universal Waste—Batteries, EXEMPT: 40 CFR 273 (Non-DOT, Nickel, Cadmium)	-	-	-	1A2/X or 1H2/Y	-	-	RQ = 100 lbs. of nickel with a concentration of 2,000 PPM or greater; RQ = 10 lbs. of cadmium with a concentration of 200 ppm or greater.
Empty Drums: Containing < 1" of Material or Waste, Destined For TSD Facility for Recycling	Special	T (CA)	-	512 (CA)	Empty; Recyclable Materials/ Waste	219316 (R) (Non-RCRA and Non-DOT residues)	California Regulated Hazardous Waste Only (Empty Drums, Non-RCRA, Non-DOT) Refer to Waste Management On-Site, subsection 6 of this Manual	-	-	-	-	-	-	-
Empty Drums: Containing < 1" of Material or Waste, Destined For Recycling/Disposal	Recyclable Hazardous Material or Special	-	-	-	Empty; Recyclable Materials/ Waste	-	Varies with each drum. Refer to Waste Management On-Site, subsection 6 of this Manual.	Varies	Varies	Varies	Varies	Varies	Varies	-
Filters Containing Fuel	Hazardous Waste	I, T	D001 D018	352 (CA)	Hazardous Waste	-	Waste Solids Containing Flammable Liquid, N.O.S. (Contains Gasoline or Diesel)	4.1	UN3175	II	1A2/X	Flammable Solid	ERG #133	RQ = 100 lbs. of waste. Note 8.
Fuel, Diesel	Special	T (CA)	-	343 (CA)	Recyclable Material/ Waste	-	Combustible Liquid, N.O.S. (Diesel Fuel) Note 7 California Regulated Hazardous Waste Only	Combustible Liquid	NA1993	III	1A1/X or 1A1/Y	None	ERG #128	Reportable: Note 8.
Fuel, Diesel, Contaminated Solid Waste	Special	T (CA)	-	352 (CA)	Recyclable Material/ Waste	340551 (R)	California Regulated Hazardous Waste Only (Solids Containing Diesel, Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	Reportable: Note 8.

Table 2

Waste Quick Reference Guide

1. Waste Stream: Hazardous Materials or Waste Generated	2. Designation *Note 1*	3. Characteristic	4. EPA Waste Code (RCRA Waste)	5. State Waste Code (State Reference)	6. Waste Label	7. Waste Profile No. (TSD Ref.) *Note 2*	8. Proper Shipping Name *Note 3*	9. DOT Hazard Class/ Division	10. UN/NA Number	11. Packing Group *Note 4*	12. DOT Spec. Container *Note 5*	13. Label Indicating DOT Hazard Class	14. ERG No. *Note 6*	15. RQ, lbs. *Note 3* (total weight of: (1) listed constituent at/above concentration indicated; (2) of waste)
Fuel, Gasoline	Hazardous Waste	I, T	D001 D018	343 (CA)	Hazardous Waste	-	Waste Gasoline	3	UN1203	II	1A1/X or 1A1/Y	Flammable Liquid	ERG #128	RQ = 10 lbs. of benzene at a concentration of 200 ppm or greater. Note 8.
Fuel, Gasoline, Contaminated Solid Waste	Hazardous Waste	T	D018	352 (CA)	Hazardous Waste	340581 (R)	Hazardous Waste, Solid, N.O.S. (Contains Gasoline, Benzene)	9	NA3077	III	1A2/X	Class 9	ERG #171	RQ = 100 lbs. of benzene at a concentration of 200 ppm or greater. Note 8
Fuel, Kerosene	Hazardous Waste	I	D001	-	Hazardous Waste	-	Waste Kerosene	3	UN1223	III	1A1/X or 1A1/Y	Flammable Liquid	ERG #128	RQ = 100 lbs. of waste. Note 8
Glycol, Ethylene, Recycled	Special	T (CA)	-	343 (CA)	Recyclable Material/ Waste	220712 (R) 147833A-00 (P)	California Regulated Hazardous Waste Only (Ethylene Glycol and Water, Non-RCRA, Non-DOT)	-	-	-	1A1/X or 1A1/Y	-	-	-
Glycol, Propylene	Special	T (CA)	-	343 (CA)	Recyclable Material/ Waste	321411 (R) 147833B-00 (P)	California Regulated Hazardous Waste Only (Propylene Glycol, Non-RCRA, Non-DOT)	-	-	-	1A1/X or 1A1/Y	-	-	-
Mercury Debris (With Mercury >= 0.2 ppm)	Hazardous Waste	T	D009	725 (CA)	Hazardous Waste	-	Hazardous Waste, Solid, N.O.S. (Contains Mercury)	9	NA3077	III	1A2/X	Class 9	ERG #171	RQ = 1 lb. of mercury with a concentration of 20 ppm or greater.
Mercury Lighting Waste (Originating in Oregon)	Oregon Universal Waste	-	-	-	Recyclable Material/ Waste	335055 (R)	Oregon Universal Waste— Mercury-Containing Lamps, EXEMPT: 40 CFR 273, Non-DOT [Fluorescent Light Tubes/High Intensity Lamps]	-	-	-	1A2/X or 4M or Original Box	-	-	RQ = 1 lb. of mercury with a concentration of 20 ppm or greater.
Mercury Lighting Waste (With Mercury >= 0.2 ppm) (Originating in Idaho)	Hazardous Waste	T	D008 D009	181 (CA)	Hazardous Waste	335050 (R)	Hazardous Waste, Solid, N.O.S. (Contains Mercury) Note 7 Fluorescent Light Tubes/High Intensity Lamps	9	NA3077	III	1A2/X or 4M or Original Box	Class 9	ERG #171	RQ = 1 lb. of mercury with a concentration of 20 ppm or greater.
Mercury Lighting Waste (With Mercury >= 0.2 ppm) (Originating in Washington and Destined for Recycling)	Washington Special	-	-	181 (CA)	Recyclable Material/ Waste	306664 (R)	Fluorescent Light Tubes/High Intensity Lamps, Ref. DOE Memo 1/30/95 (Non-DOT)	-	-	-	1A2/X or 4M or Original Box	-	-	RQ = 1 lb. of mercury with a concentration of 20 ppm or greater.

Table 2

Waste Quick Reference Guide

1. Waste Stream: Hazardous Materials or Waste Generated	2. Designation *Note 1*	3. Characteristic	4. EPA Waste Code (RCRA Waste)	5. State Waste Code (State Reference)	6. Waste Label	7. Waste Profile No. (TSD Ref.) *Note 2*	8. Proper Shipping Name *Note 3*	9. DOT Hazard Class/ Division	10. UN/NA Number	11. Packing Group *Note 4*	12. DOT Spec. Container *Note 5*	13. Label Indicating DOT Hazard Class	14. ERG No. *Note 6*	15. RQ, lbs. *Note 3* (total weight of: (1) listed constituent at/above concentration indicated; (2) of waste)
Mercury Thermostats	Universal Waste	-	-	725 (CA)	Recyclable Material/ Waste	-	California Regulated Hazardous Waste Only (Non-DOT) Note 7 Universal Waste—Mercury Thermostats, EXEMPT: 40 CFR 273	-	-	-	1A2/X or	-	-	RQ = 1 lb. of mercury with a concentration of 20 ppm or greater.
Mercury, Liquid (1 pound or more of mercury) and Mercury Devices, Including Thermometers, Barometers, Manometers, Thermowells and Switches	Hazardous Waste	T	D009 and possibly U151	725 (CA)	Hazardous Waste	-	Quantity Dependent: At greater than or equal to 1 pound of mercury, use: Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Mercury)	9	UN3082	III	1A1/X or 1A1/Y	Class 9	ERG #171	RQ = 1 lb. of mercury with a concentration of 20 ppm or greater.
Mercury, Liquid (less than 1 pound of mercury) and Mercury Devices, Including Thermometers, Barometers, Manometers, Thermowells and Switches	Hazardous Waste	T	D009 and possibly U151	725 (CA)	Hazardous Waste	213191 (R)	Quantity Dependent: At less than 1 pound of mercury, use: Hazardous Waste, Liquid, N.O.S. (Contains Mercury (Metallic))	9	NA3082	III	1A1/X or 1A1/Y	Class 9	ERG #171	-
Methanol	Hazardous Waste	I, T (CA)	D001 and F003 or U154	343 (CA)	Hazardous Waste	340061 (R)	Waste Methanol	3	UN1230	II	1A1/X or 1A1/Y	Flammable Liquid; Poison	ERG #131	RQ = 5,000 pounds of methanol with a concentration of greater than or equal to 10%.
Odorant Liquid	Hazardous Waste	I, T (CA)	D001	343 (CA)	Hazardous Waste	314416 (R) 1-40% water	Waste Mercaptan Mixtures, Liquid, Flammable, Toxic, N.O.S. (Contains T-Butyl Mercaptan)	3	UN1228	III	1A1/X or 1A1/Y; 1A2/X (Labpack)	Flammable Liquid; Keep Away From Food	ERG #131	RQ = 100 lbs. of waste.
Odorant Rags and Debris	Special	T (CA)	-	352 (CA)	Recyclable Material/ Waste	219313 (R)	California Regulated Hazardous Waste Only (Rags/Debris, T-Butyl Mercaptan, Non-RCRA, Non-DOT)	-	-	-	1A2/X or 1H2/Y	-	-	-
Oil With Water and Sediment	Special	T (CA)		223 (CA)	Recyclable Material/ Waste	219314 (R)	California Regulated Hazardous Waste Only (Oil, Sediment, Non-RCRA, Non-DOT)	-	-	-	1A1/X or 1A1/Y	-	-	Reportable: Note 8.
Oily Pigs and Pads	Special	T (CA)	-	223 (CA)	Recyclable Material/ Waste	220708 (R) 5-25% Oil, 65-85% Sorbents	California Regulated Hazardous Waste Only (Sorbents, Oil, Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	Reportable: Note 8

Table 2

Waste Quick Reference Guide

1. Waste Stream: Hazardous Materials or Waste Generated	2. Designation *Note 1*	3. Characteristic	4. EPA Waste Code (RCRA Waste)	5. State Waste Code (State Reference)	6. Waste Label	7. Waste Profile No. (TSD Ref.) *Note 2*	8. Proper Shipping Name *Note 3*	9. DOT Hazard Class/ Division	10. UN/NA Number	11. Packing Group *Note 4*	12. DOT Spec. Container *Note 5*	13. Label Indicating DOT Hazard Class	14. ERG No. *Note 6*	15. RQ, lbs. *Note 3* (total weight of: (1) listed constituant at/above concentration indicated; (2) of waste)
Oily Sludge (e.g., Separator Sludge)	Special	T (CA)	-	223 (CA)	Recyclable Material/ Waste	219315 (R)	California Regulated Hazardous Waste Only (Oil, Sludge, Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	Reportable: Note 8.
Oily Solids, Equipment Oil Filters With Textile Filter	Special	T (CA)	-	223 (CA)	Recyclable Material/ Waste	220709 (R)	California Regulated Hazardous Waste Only (Oil, Equipment Textile Filters, Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	Reportable: Note 8.
Oily Solids: Gravel, Soil	Special	T (CA)	-	223 (CA)	Recyclable Material/ Waste	220708 (R) 5-25% Oil and 5-15% Gravel/ Debris	California Regulated Hazardous Waste Only (Solids,, Oil, Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	Reportable: Note 8.
Oily Solids, Motor Vehicle Filters, Not Hot-Drained and Punctured	Special	T (CA)	-	223 (CA)	Recyclable Material/ Waste	219322 (R)	California Regulated Hazardous Waste Only (Filters, Oil, Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	Reportable: Note 8.
Paint Chips and Debris With Lead: < 5 ppm Lead	Special	T (CA)	-	181 (CA)	Recyclable Material/ Waste	321117 (R)	California Regulated Hazardous Waste Only (Paint Chips, Debris, Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	-
Paint Chips and Debris With Lead: >= 5 ppm lead	Hazardous Waste	T	D008	181 (CA)	Hazardous Waste	311008 (R)	Hazardous Waste, Solid, N.O.S. (Contains Lead)	9	NA3077	III	1A2/X	Class 9	ERG #171	RQ = 10 lbs. of lead with a concentration of 200 ppm or greater.
Paint Stripper, Corrosive (e.g., Peel Away 1, ST-1)	Special Note 9	-	-	181 (CA)	Recyclable Material/ Waste	311383 (R)	Paint Related Material Note 7 Corrosive Stripper—Contains Sodium Hydroxide	8	UN3066	III	1A2/X	Corrosive	ERG #153	RQ = 1,000 lbs. Of sodium hydroxide with a concentration of 2% or greater.
Paint Thinner (Naphtha)	Hazardous Waste Note 9	I, T (CA)	D001	213 (CA)	Hazardous Waste	220703 (R)	Waste Paint Related Material Note 7 (Contains Naphtha)	3	UN1263	III	1A1/X or 1A1/Y; 1A2/X (Labpack)	Flammable Liquid	ERG #127	RQ = 100 lbs. of waste. Note 8.
Paint, Oil-Based (Flammable)	Hazardous Waste Note 9	I, T (CA)	D001	343 (CA)	Hazardous Waste	339532 (R)	Waste Paint Related Material Note 7 Oil-Based Paints	3	UN1263	III	1A1/X or 1A1/Y; 1A2/X (Labpack)	Flammable Liquid	ERG #127	RQ = 100 lbs. of waste.
Paint, Water-Based	Special Note 9	T (CA)	-	352 (CA)	Recyclable Material/ Waste	340059 (R)	California Regulated Hazardous Waste Only (Paint, Water-Based, Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	-
Paint, Water-Based (Corrosive)	Hazardous Waste	C	D002		Hazardous Waste	-	Waste Paint Related Waste Material Note 7 Corrosive Paints	8	UN3066	II	1A1/X or 1A1/Y; 1A2/X (Lab pack)	Corrosive	ERG #153	RQ = 100 lbs. of waste.

Table 2

Waste Quick Reference Guide

1. Waste Stream: Hazardous Materials or Waste Generated	2. Designation *Note 1*	3. Characteristic	4. EPA Waste Code (RCRA Waste)	5. State Waste Code (State Reference)	6. Waste Label	7. Waste Profile No. (TSD Ref.) *Note 2*	8. Proper Shipping Name *Note 3*	9. DOT Hazard Class/ Division	10. UN/NA Number	11. Packing Group *Note 4*	12. DOT Spec. Container *Note 5*	13. Label Indicating DOT Hazard Class	14. ERG No. *Note 6*	15. RQ, lbs. *Note 3* (total weight of: (1) listed constituent at/above concentration indicated; (2) of waste)
Polychlorinated Biphenyls (PCBs): Light Ballasts With PCBs (Non-Leaking Ballasts)	Special	T (CA)	-	731 (CA)	Recyclable Material/ Waste, PCB	340641 (R)	RQ, Polychlorinated Biphenyls Note 7 California Regulated Hazardous Waste Only	9	UN2315	II	1A2/X	Class 9	ERG #171	RQ = 1 lb. of PCBs with a concentration of 20 ppm or greater.
Polychlorinated Biphenyls (PCBs): Light Ballasts With PCBs (Leaking Ballasts)	Special	T (CA)	-	731 (CA)	Recyclable Material/ Waste, PCB	6874 (Salesco)	RQ, Polychlorinated Biphenyls Note 7 California Regulated Hazardous Waste Only	9	UN2315	II	1A2/X	Class 9	ERG #171	RQ = 1 lb. of PCBs with a concentration of 20 ppm or greater.
Polychlorinated Biphenyls (PCBs): Scrubber Oil With PCBs	Special	T (CA)	-	343 (CA)	Recyclable Material/ Waste	-	California Regulated Hazardous Waste Only (Polychlorinated Biphenyls)	-	-	-	1A1/X or 1A1/Y	-	-	RQ = 1 lb. of PCBs with a concentration of 20 ppm or greater.
Shop Rags—Oily, Laundered, Generated in Oregon	Special	-	-	-	Recyclable Material/ Waste	-	Dirty Rags Destined for Laundering: Oily Rags (Non-RCRA, Non-DOT)	-	-	-	1A2/X	-	-	-
Shop Rags—Solvent, Laundered, Generated in Oregon (Ignitable Solvents Such As Petroleum Naphtha)	Special	-	-	-	Recyclable Material/ Waste	-	Solids Containing Flammable Liquid, N.O.S. (Contains ___) Note 7 Dirty Rags Destined for Laundering: Solvent Rags.	4.1	UN3175	II	1A2/X	Flammable Solid	ERG #133	-
Solvent, Fyre Wash and Water	Special Note 9	T (CA)	-	343 (CA)	Recyclable Material/ Waste	220705 (R)	California Regulated Hazardous Waste Only (Water and Naphtha, Non-RCRA, Non-DOT)	-	-	-	1A1/X or 1A1/Y	-	-	-
Solvent, Safety-Kleen Immersion Cleaner #699 (Carburetor Cleaner)	Hazardous Waste	T	D006 D008 D018 D027 D039 D040		Hazardous Waste	SK-3	Waste Compounds, Cleaning Liquid, N. O. S. (Contains Monoethanolamine)	8	NA1760	III	Safety-Kleen handles	Corrosive	ERG #154	RQ of lead, cadmium, benzene = 10 lbs. with a concentration of 200 ppm or greater RQ of trichloroethylene, 1,4-dichlorobenzene and tetrachloroethylene = 100 lbs. with a concentration of 2,000 ppm or greater.

Table 2

Waste Quick Reference Guide

1. Waste Stream: Hazardous Materials or Waste Generated	2. Designation *Note 1*	3. Characteristic	4. EPA Waste Code (RCRA Waste)	5. State Waste Code (State Reference)	6. Waste Label	7. Waste Profile No. (TSD Ref.) *Note 2*	8. Proper Shipping Name *Note 3*	9. DOT Hazard Class/ Division	10. UN/NA Number	11. Packing Group *Note 4*	12. DOT Spec. Container *Note 5*	13. Label Indicating DOT Hazard Class	14. ERG No. *Note 6*	15. RQ, lbs. *Note 3* (total weight of: (1) listed constituent at/above concentration indicated; (2) of waste)
Solvent, With Flash Point of <= 141° F. (e.g., Petroleum Naphtha: Safety-Kleen 105° F. Flash Point)	Hazardous Waste Note 9	I, T (CA)	D001 (Others Will Apply to Safety-Kleen)	343 (CA) WP02 (WA)	Hazardous Waste	340062 (R) SK-1	Waste Petroleum Distillates, N.O.S. (Contains Petroleum Naphtha)	3	UN1268	III	1A1/X or 1A1/Y; (Safety-Kleen may handle)	Flammable Liquid	ERG #128	RQ = 100 lbs. of waste. Note 8.
Solvent, With Flash Point of > 141° F. (e.g., Petroleum Naphtha: Safety-Kleen 150° F. Flash Point)	Special (if no other waste codes are applicable) Note 9	T (CA)	- Note 9	213 (CA)	Recyclable Material/ Waste	340657 (R) SK-3021735	Combustible Liquid, N.O.S. (Contains Petroleum Naphtha) Note 7 California Regulated Hazardous Waste Only	Combustible Liquid	NA1993	III	1A1/X or 1A1/Y; 1A2/X (Labpack); Safety-Kleen may handle.	-	ERG #128	Reportable: Note 8.
Solvent, With Flash Point of > 141° F. (e.g., Petroleum Naphtha: Safety-Kleen 150° F. Flash Point, contaminated with trichloroethylene)	Hazardous Waste	T	D040		Hazardous Waste	SK-3021734 (Redmond MB)	Waste Combustible Liquid, N.O.S. (Contains Petroleum Naphtha, trichloroethylene)	Combustible Liquid	NA1993	III	1A1/X or 1A1/Y; 1A2/X Safety-Kleen handles.	-	ERG #128	Reportable: Note 8.
Used Oil	Used Oil	T (CA)	-	221 (CA)	Used Oil or Recyclable Material/ Waste Note 7	100074-02 (P)	Used Oil (Non-DOT)	-	-	-	1A1/X or 1A1/Y	-	-	Reportable: Note 8.

APPENDIX G

HORIZONTAL DIRECTIONAL DRILL PLAN

TransCanada
In business to deliver

North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix G
Horizontal Directional Drill Plan

Prepared by

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February 2006

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Appendix G

Horizontal Directional Drill Plan

1.0 INTRODUCTION

North Baja Pipeline, LLC (North Baja), will construct the North Baja Pipeline Expansion Project (Project), a new natural gas pipeline from the U.S.-Mexico border to the existing North Baja facilities and the El Paso Natural Gas system in Ehrenberg, Arizona. The Project includes four elements: the B-Line, which includes a metering station and interconnection facilities in Ehrenberg and in Blythe, California, as well as an 79.8-mile, 42- and 48-inch-diameter pipeline between Blythe and the Mexican border; the Blythe Energy Interconnect (BEI) Lateral, a 0.6-mile, 10-inch-diameter pipeline that connects the Blythe Meter Station to the existing supply pipeline for the Blythe Energy Facility I; the short (less than 0.1 mile) 36-inch-diameter SoCal Gas Interconnect, and the Imperial Irrigation District (IID) Lateral, a 45.7-mile, 16-inch-diameter pipeline between North Baja's mainline and the IID El Centro Generating Station. The Project will be constructed in phases, with the first phase planned for construction in 2007, the IID Lateral for 2008, and the final phase of the Project in 2009, pending completion of upstream liquefied natural gas (LNG) terminal facilities.

This directional drill contingency plan provides specific procedures and steps to contain inadvertent releases of drilling mud (also referred to as frac-outs) for waterbodies that are crossed using horizontal directional drilling (HDD) techniques. As part of its North Baja Pipeline Expansion Project, North Baja proposes to directionally drill the Colorado River and the All-American Canal on the B-Line, and on the IID Lateral, North Baja proposes to directionally drill two crossings of the All-American Canal and a crossing of the East Highline Canal. While waterway crossings vary substantially in installation depth, current profile data indicate a minimum depth of cover of 60 feet for the Colorado River crossing, 30 feet for the All-American Canal crossings, and 30 feet for the East Highline Canal crossing. Pipe used for the directionally drilled crossings on the B-Line will be 48 inches in diameter for the All-American Canal and 42 inches for the Colorado River. Pipe used for the directionally drilled crossings of the IID Lateral will be 16 inches in diameter.

2.0 HORIZONTAL DIRECTIONAL DRILLING PROCESS

Installation of a pipeline by HDD is generally accomplished in three stages. The first stage consists of directionally drilling a small-diameter pilot hole along a pre-determined path. The second stage enlarges this pilot hole to a diameter that will accommodate the pipeline. Numerous "reaming" passes will be necessary with each pass enlarging the diameter of the pilot hole incrementally. The third stage involves pulling the pipeline through the enlarged hole.

During the drilling of the pilot hole, directional control is achieved by using a non-rotating drill string with an asymmetrical leading edge. The asymmetry of the leading edge creates a steering bias, which allows the operator to control the direction of the drill bit. The actual path of the pilot hole is monitored during drilling by taking periodic readings of the inclination and azimuth. These readings are used to calculate the horizontal and vertical coordinates along the pilot holes relative to the initial entry point on the surface.

Once the pilot hole is complete, it is enlarged using reaming tools that are often custom-made for a particular diameter pipe or type of soil. The reamers are typically attached to the drill string at the exit point and are rotated and drawn to the drilling rig, thus enlarging the pilot hole with each pass. Pipe installation is accomplished by attaching a prefabricated pull section behind a reaming assembly at the exit point and pulling the entire assembly back to the drilling rig. When the pipe is in place beneath the river, tie-in welds on the river/stream banks complete the crossing.

Ideally, horizontal directional drilling involves no disturbance to the bed or banks of a stream. However, it is possible that geologic irregularities could be encountered during drilling, and drilling could fail. This plan describes the potential for failure of horizontal directional drilling, the contingency methods that would be implemented in the event of inadvertent release of drilling fluids to water or land, and drill hole abandonment procedures.

The feasibility of the horizontal directional drill method primarily depends on the local geologic setting, as well as site topography and other surface features. For example, horizontal directional drilling may not be feasible in areas of glacial till or outwash interspersed with boulders and cobbles, highly fractured bedrock, or non-cohesive coarse sands and gravels. These formations increase the likelihood that drilling could fail due to refusal of the drill bit, continuous loss of drilling fluid through fractures or weak areas in the ground, or collapse of the bore hole in non-cohesive, unstable substrate. Steep terrain immediately adjacent to the crossing location or other surface features can also render the HDD method impossible or increase the risk of failure.

Fortunately, surface characteristics at the proposed Project drill sites are generally favorable for HDD. North Baja previously obtained soil borings from each side of the Colorado River and All-American Canal crossings on the B-Line and successfully completed HDDs at both locations in

2002. This work indicates that conditions are favorable for horizontal directional drilling. Geotechnical investigations for the IID Lateral crossings will be conducted in the spring of 2006.

While the borings can provide a general basis for determining feasibility, they cannot predict all problems that could occur. Even the previous successful drills on the original North Baja Pipeline Project cannot be used to predict with absolute certainty the results for an adjacent drill.

3.0 MONITORING PROCEDURES

The Environmental Inspector(s) and construction personnel will continuously monitor operations during drilling activities. Monitoring activities will include:

- Visual inspection along the drill path, including monitoring the waterbody for evidence of a release.
- Continuous examination of drilling fluid pressures and returns flows.

4.0 NOTIFICATION PROCEDURES

If in the course of an inspection an inadvertent release is discovered, steps will be taken by construction personnel to contain the release as described in Section 5.0, Corrective Action and Cleanup. Notification procedures of North Baja construction management personnel and regulatory agencies are detailed in this section.

If monitoring indicates an in-stream release, the Environmental Inspector(s) will immediately notify North Baja's construction management personnel. North Baja will notify the appropriate Federal and State agencies as soon as possible by telephone and/or facsimile of an in-stream release event, detailing the nature of the release and corrective actions being taken. The notified agencies will determine whether additional measures need to be implemented. If it is determined that the release can not be remedied without causing additional environmental impact, North Baja will request agency approval to continue the drilling operations.

If a release occurs that may migrate downstream and affect water quality, downstream water users will be contacted by North Baja. The contacts and telephone numbers of downstream users will be assembled prior to commencement of construction, and maintained on site.

5.0 CORRECTIVE ACTION AND CLEANUP

By monitoring drilling operations continuously, North Baja intends to correct problems before they occur. In addition, containment equipment including earth-moving equipment, portable pumps, hand tools, sand, hay bales, silt fence, lumber, and a suction dredge will be readily available at the drill site. If a release does occur, the following measures will be implemented to stop or minimize the release and to clean it up:

- The drilling contractor will decide what modifications to make to the drilling technique or composition of drilling fluid (*e.g.,* thickening of fluid by increasing bentonite content) to reduce or stop minor losses of drilling fluid.
- If a minor bore path void is encountered during drilling, making a slight change in the direction of the bore path may avoid loss of circulation.
- If the bore head becomes lodged resulting in loss of drilling pressure, the borehole may be sized by moving the bore head back and forth to dislodge the stuck materials.
- If necessary, drilling operations will be reduced to assess the extent of the release and to implement other possible corrective actions.
- If public health and safety are threatened, drilling fluid circulation pumps will be turned off. This measure will be taken as a last resort because it increases the potential for drill hole collapse resulting from loss of down-hole pressure.
- If a land release is detected, the drilling crew will take immediate corrective action to contain the release and to prevent migration off site.
- The contractor will construct pits and berms around the borehole entry point to contain inadvertent releases onto the ground.
- Any drilling mud released into the pits will be pumped by contractor personnel into a mud-processing unit for recycling of drilling fluid and separation of cuttings.
- Additional berms will be constructed around the bore pit as directed by the Environmental Inspector(s) to prevent release materials from flowing into the waterbody.
- If the amount of an on-land release does not allow practical collection, the affected area will be diluted with fresh water and allowed to dry. Steps will be taken (such as berm, silt fence, and/or hay bale installation) to prevent silt-laden water from flowing into the waterbody.
- If hand tools cannot contain a small on-land release, small collection sumps (less than 5 cubic yards) may be constructed to pump the released material into the mud processing system.
- Contractor HDD crews will immediately implement non-mechanized measures to contain the spread of drilling fluids, including the installation of hay bales or silt fence.

- Sump pumps or vac trucks will be used to remove and dispose of any drilling fluids.
- Time permitting; HDD crews will await the arrival of CDFG representatives before proceeding with mechanized measures to contain the spread of drilling fluids. This could include construction of a containment berm.
- Any activities outside the approved right-of-way or extra workspace will be surveyed by a qualified biologist.

6.0 ABANDONMENT

If corrective actions do not prevent or control releases from occurring into the waterbody, North Baja may opt to re-drill the hole along a different alignment or suspend the Project altogether. In either case, the following procedures will be implemented to abandon the drill hole.

- The method for sealing the abandoned drill hole is to pump thickened drilling fluid into the hole as the drill assembly is extracted, and using cement grout to make a cap.
- Closer to the surface of the hole(s) (within approximately 10 feet of the surface), a soil cap will be installed by filling with soil extracted during construction of the pit and berms.
- The bore hole entry location will be graded by the contractor to its original grade and condition after the drill hole has been abandoned.

7.0 SITE-SPECIFIC PLANS

After contracting with an HDD contractor and prior to initiating HHD operations, North Baja will prepare a site-specific HDD Drilling Plan for The Colorado River and each canal HDD crossing. The plan will be similar to the plan prepared for the A-Line in 2002. The Plan will be submitted to the CDFG and will address:

A. HHD Operations Description:

1. Construction drawing
2. Depth of bore, assessment of streambed and frac-out risk
3. Type and size of boring equipment to be used (*e.g.,* mini, mid, or maxi)
4. Estimated time to complete bore
5. List of lubricants and muds to be used (MSDS sheets okay)
6. Name of contractor and cell phone numbers of construction supervisor and monitor

    Project Coordinator

    Construction Supervisor

    Crew Monitor

B. Frac-Out Prevention and Cleanup Plans Will Include:

1. Name(s) of environmental and biological monitor(s)
2. Site-specific monitoring conditions (*e.g.,* preconstruction surveys for sensitive species)
3. Monitoring protocols, including biological monitoring and frac-out monitoring (North Baja will have Biological Monitors on-site during HDD activities.)

    Frac-Out Monitoring

    General Monitoring

4. Containment and cleanup plan (include staging location of vacuum trucks and equipment, equipment list, necessary hose lengths, special measures needed for steep topography, etc.)

   Planning and Set Up

   Operation

   Spill Protocol

APPENDIX H

TRAFFIC MANAGEMENT PLANS

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NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix H-1
Traffic Management Plan for 18th Avenue

Prepared by

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February 2006

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Exhibit A	18th Avenue Pipeline Route General Vicinity Map
Exhibit B	18th Avenue Construction Plan Vicinity Map
Exhibit C	18th Avenue Traffic Plan Location Map (sheets 1-3)

LIST OF ATTACHMENTS

Attachment A	Typical Traffic Control Measures

Appendix H-1

Traffic Management Plan for 18th Avenue

1.0 INTRODUCTION

North Baja Pipeline, LLC (North Baja), will construct the North Baja Pipeline Expansion Project (Project), a new natural gas pipeline from the U.S.-Mexico border to the existing North Baja facilities and the El Paso Natural Gas System in Ehrenberg, Arizona. The Project includes four elements: the B-Line, which includes a metering station and interconnection facilities in Ehrenberg and in Blythe, California, as well as a 79.8 -mile, 42- and 48-inch-diameter pipeline between Blythe and the Mexican border; the Blythe Energy Interconnect (BEI) Lateral, a 0.6-mile, 10-inch-diameter pipeline that connects the Blythe Meter Station to the existing supply pipeline for the Blythe Energy Facility I; the short (less than 0.1 mile) 36-inch-diameter SoCal Gas Interconnect; and the Imperial Irrigation District (IID) Lateral, a 45.7-mile, 16-inch-diameter pipeline between North Baja's mainline and the IID El Centro Generating Station. The Project will be constructed in phases, with the first phase planned for construction in 2007, the IID Lateral for 2008, and the final phase of the Project in 2009, pending completion of upstream liquefied natural gas (LNG) terminal facilities.

In 2002, North Baja constructed the 36-inch/30-inch A-Line of which the 36-inch segment generally is installed in the north edge of 18th Avenue. Between mileposts (MPs) 2.3 and 10.4 of the B-Line, the pipeline will be placed generally within the south edge of 18th Avenue, as shown on the Pipeline Route General Vicinity Map, Exhibit A. This document describes North Baja's Traffic Management Plan to be employed during construction of the 42-inch B-Line along the south side of 18th Avenue.

2.0 ROUTE DESCRIPTION – 18TH AVENUE AND VICINITY

On the west side of the Colorado River, the pipeline will turn south through fallow and/or irrigated agricultural land for about 1.8 miles (MP 0.5 to MP 2.3), and will be installed adjacent to the existing 36-inch North Baja A-Line which is adjacent to the east side of the D-10-13 Canal levee road to the 18th Avenue extension.

Exhibit B shows the general location of the pipeline route in relation to 18th Avenue and shows the orientation of the detailed maps that comprise Exhibit C.

At the intersection of the D-10-13 Canal and the 18th Avenue extension, the 42-inch-diameter pipeline will turn west and will be installed within the 18th Avenue extension (a dirt road) using a 120-foot-wide right-of-way, consisting of North Baja's existing 50-foot-wide right-of-way, and 70 feet of new temporary workspace, for about 0.6 mile. At the D-10 Canal, 18th Avenue becomes paved and remains paved for about 7.6 miles to the intersection of Keim Boulevard. Throughout this segment, the pipeline will be installed within the road shoulder or within the paved roadway. Except for extra work spaces at selected locations, construction will be confined to the 60-foot-wide designated county road right-of-way, which consists of the paved road and adjacent road shoulder. Adjacent land uses along 18th Avenue are agricultural and low density residential and business uses. The pipeline route crosses eight irrigation canals, five drains, nine delivery ditches, nine roads, and one railroad. Occupants of twenty-four residences and two businesses use 18th Avenue for access. Farmers tilling the ground adjacent to 18th Avenue also require ingress and egress at points along the road. Homes and buildings will be located between 20 and 250 feet of the edge of the construction work area. The existing mainline valve lot along 18th Avenue near Lovekin Road will be expanded to add a second valve for the B-Line at MP 5.5.

3.0 TRAFFIC MANAGEMENT APPROACH

North Baja has consulted with the Riverside County Department of Public Works. Riverside County requires that construction measures comply with California Department of Transportation (CalTrans) Traffic Manual. North Baja's plan requires that the contractor comply with all relevant elements of the CalTrans Traffic Manual, Chapter 5, Traffic Controls. Key traffic control elements in the manual address:

- Temporary traffic control;
- Pedestrian, bicycle, and worker considerations;
- Hand signaling control;
- Types of traffic control devices; and
- Types of temporary traffic control zone activities.

Section 3.1 describes the construction considerations along 18th Avenue. Section 3.2 addresses the traffic management approach. Exhibit C is a series of 1 inch = 2,000 feet maps showing the location of the route in relation to 18th Avenue, canals, drains, railroad, and cross streets. It shows the location of construction segments and individual residences and businesses. Attachment A shows typical traffic control measures contained in the CalTrans Traffic Manual that will be implemented by the contractor.

North Baja will submit detailed construction drawings for approval by Riverside County Public Works Department as part of obtaining an Encroachment Permit.

3.1 18TH AVENUE CONSTRUCTION CONSIDERATIONS

The following summarizes the construction considerations for 18th Avenue:

Location in Relation to 18th Avenue – Construction in the paved segment of 18th Avenue will be accomplished using urban construction techniques. To minimize disruption to residences and facilitate construction across roadways, canals and drains, North Baja will locate the pipe approximately 13.0 feet south of the centerline of the pavement. North Baja proposes to confine the construction work area to the County road right-of-way with additional extra work space located along the road at major crossings such as cross streets, railroads, canals, and ditches. Certain crossings such as the operating canals, the Arizona-California Railroad, State Highway 78, and three county roads will be installed by conventional boring. All other crossings are proposed to be open cut aside from the drains whose substantial depth allows for the pipeline to be installed across the top.

Preconstruction Planning – Before construction in 18th Avenue, North Baja will obtain an amended franchise agreement and an encroachment permit from the County of Riverside

Transportation Department. Design and construction methods will conform to Riverside County requirements. Preconstruction activities will include preliminary examination of the work areas and identification of the exact location of subsurface utilities, either through visual inspection or by digging potholes at intervals along the pipeline trench. If potholing identifies a conflict between existing utilities and the pipeline centerline, then the pipeline or utility will be horizontally and/or vertically realigned to eliminate the conflict.

North Baja will contact each owner and/or tenant of the properties abutting the road to explain the construction process and identify any special conditions or concerns that need to be incorporated into the construction plans. In addition, these adjacent residents and businesses will be notified by hand-distributed flyers 2 weeks before construction.

Timing –To minimize the duration of inconvenience to residences, North Baja proposes to close sections of road where construction is active and reroute non-local traffic around these areas (while maintaining access for residents). Construction will advance along the road at an estimated 500 feet per day; however to expedite completion and thereby minimize the duration of any inconvenience to residents, construction may be active at numerous locations along 18th Avenue at any given time. Excluding repaving, direct construction impacts at any given location are estimated to last about 2 to 3 weeks.

Construction Crews –The initial plan following contractor mobilization is to have a specialized crew solely designated to the 18th Avenue work. This crew will be a self-sufficient “mini spread” experienced with work in congested areas and will have two major components. The first component being the individuals associated with the installation of the major crossings and the second component will be responsible for the installation of the pipeline sections in between the crossings. Both components of this crew will make every effort to keep unavoidable road closures or restricted access to a minimum and coordinate those closures with residences and businesses.

Safety Considerations and Access – Although 18th Avenue is not a heavily traveled roadway, there are 26 residences and businesses along the proposed route. North Baja will apply specific traffic management measures in cooperation with the County of Riverside Transportation Department. These include:

- The pipeline will be installed with a minimum of 36 inches of cover and with a minimum of 12 inches of separation from other utilities or obstructions. A minimum of 2 feet will be maintained under canals and 5 feet over drains.
- Intersections will be bored or trenched and steel plated if construction doesn’t occur on consecutive days.
- Adjacent residents and businesses will be notified by hand-distributed flyers 2 weeks before construction. The flyers will include the dates of construction, the work hours, traffic detours, and contact numbers for North Baja and the contractor. Emergency response agencies will also be notified of the work schedule.
- The Underground Service Alert will be notified at least 48 hours before beginning work.

- Flagging personnel will be provided to route traffic around construction equipment and obstructions.
- Work will be scheduled during daylight hours unless alternative schedules are authorized.
- Access will be maintained to all residences or businesses except during actual trenching operations. Steel plates will be available to maintain access to driveways during periods when the trench is open.
- Non-local traffic will be detoured around construction activities.
- One lane of restricted traffic movement will be maintained through the construction area as it progresses down 18th Avenue. This will allow residences and businesses reasonable access during the construction activities.
- Where unrestricted traffic is impractical, North Baja proposes that its contractor will maintain at least one direction, either east or west, for exit of local traffic and access for any emergency traffic that may occur.
- At non-work times the work area will be secured and patrolled to minimize safety hazards associated with open trenches, heavy equipment and other construction operations.
- Open trenches will be covered or cordoned off during non-working hours. The length of open trench may vary with individual circumstances and interferences that may occur along the corridor.

Trenching and Boring – The trench depth for the portions of the pipeline between the bored crossings is expected to be 6 to 7 feet to accommodate the 42-inch pipe and maintain 36-inch of cover in accordance with USDOT Pipeline Safety Regulations. Trench depth will also be contingent on the type of soils and the quantity of ground water encountered. Spoil material from the trench will be stockpiled and spread on the work side of the right-of-way or hauled to an approved stockpile location. Because the pipeline installation is in the road corridor, no topsoil segregation is planned. Any pavement or rock materials removed during the installation of the pipeline will be hauled away to an approved landfill or other suitable location. Sheet piling and dewatering techniques such as well-pointing will be utilized, as needed, in order to ensure a safe and stable trench and bore entrance or exit holes. Pipeline trench borehole dewatering will be kept to a minimum, as is practical. North Baja will dewater to nearby canals and drains in accordance with PVID requirements.

Pipe Installation – Pipe installation into the trench will preferably be done in sections as long as practical, with the pipe sections being welded up alongside the ditch. In tight work areas, the contractor may elect to “double joint” pipe lengths into 80-foot sections at an offsite location and transport the pipe joints to the area. In addition, longer sections may be welded up at staging areas located near 18th Avenue for use in very narrow workspace zones. One pipe installation method that will be used in numerous areas along 18th Avenue is the stovepipe method. This method allows for the pipe to be welded up in the trench, one pipe joint at a time, and sequentially backfilled following coating operations. This method keeps the length of open trench to a minimum and allows for better access management.

As the pipe installation progresses, tie-ins will be done in the ditch at convenient locations to facilitate welding. Most tie-ins will occur on either side of crossings and at sites where installation methodology changes from one approach to another, *i.e.*, stovepipe to traditional pipe-lay. At these locations the ditch will be widened sufficiently to allow welders access and afford them the space necessary to complete the welds.

Backfilling and Testing – Following pipe installation and the coating of the welds, the ditch will be backfilled with the spoil material removed that meets North Baja's pipeline padding specifications, and compacted to the requirements of the County of Riverside Transportation Department. New pavement will be installed where existing pavement is removed for ditching, and the area will be opened back to normal traffic. However, during hydrostatic testing the area again will be limited to traffic of necessity as a safety precaution. North Baja proposes to test the pipeline during a time of least disruption to the local residences and businesses. A minimum 8-hour hydrostatic test period is required by North Baja.

Noise and Dust – Noise will be reduced by maintaining equipment in good operating condition, equipped with proper noise control accessories including mufflers and or sound attenuation enclosures. Noise will be monitored for equipment that may run for extended periods of time such as pumps, compressors and generators. Work will be scheduled during daylight hours unless alternative schedules are authorized. Dust will be suppressed by the use of water trucks and regular spraying.

Restoration – Following a successful test, the entire area will be cleaned up and restored to its original condition. Residential areas disturbed during construction will have all fencing, lawns and plant materials replaced to a standard equal to the preconstruction conditions. Pavement removed or damaged during construction will be replaced initially with temporary material, and later re-paved, during restoration, to the requirements of the County of Riverside Transportation Department.

3.2 TRAFFIC MANAGEMENT APPROACH

To effectively outline the traffic management issues associated with the pipe installation on 18th Avenue, the plan has been broken into segments. The plan is subject to revision as the design of the pipeline is finalized and input is received from the pipeline contractor. The segments are as follows:

Segment 1 – MP 2.92 to MP 3.42
Segment 2 – MP 3.43 to MP 4.00
Segment 3 – MP 4.01 to MP 5.00
Segment 4 – MP 5.01 to MP 6.00
Segment 5 – MP 6.01 to MP 7.00
Segment 6 – MP 7.01 to MP 8.00

Segment 7 – MP 8.01 to MP 9.00

Segment 8 – MP 9.01 to MP 10.00

Segment 9 – MP 10.01 to MP 10.50

Segment 1 – MP 2.92 to MP 3.42

For Segment 1 and all other segments along 18th Avenue, construction equipment and personnel will utilize the eastbound lane for pipe installation. For all of Segment 1, the westbound lane will serve as access for emergency vehicles and local residents only. One-lane traffic control along Segment 1 will be accomplished by the use of adequate warning, delineation and channelization techniques. Such techniques include proper pavement marking, and/or signs or use of other traffic control devices that are effective under varying conditions of light and weather. These devices include but are not limited to cones, barricades, portable delineators, flexible post type channelizers, drums, and barricades. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers.

Near the end of Segment 1, at approximately milepost 3.40, is the proposed open-cut crossing of Intake Boulevard. While the roadway is being open-cut for the installation of the pipeline, southbound traffic on Intake Boulevard will be detoured west on Seeley Avenue (16th Avenue), which parallels 18th Avenue one mile to the north. Northbound traffic will be detoured west on 22nd Avenue, which parallels 18th Avenue approximately 2 miles to the south. Motorists will use C & D Boulevard, one mile west of Intake Boulevard, for northbound and southbound traffic flow during the detour. The detour will be posted clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Intake Boulevard.

These temporary traffic control zones will be carefully monitored under varying conditions of traffic volume, light and weather to ensure that traffic control measures are operating effectively and that all devices are clearly visible, clean and in good repair.

Segment 2 – MP 3.43 to MP 4.00

From approximately milepost 3.43 to 3.95, of Segment 2, implementation of diversions will be required. Diversions are needed when traffic is directed onto a temporary roadway or alignment placed in or next to the roadway. These will be required where traffic is routed onto the road shoulder of 18th Avenue to maintain access for local residents and emergency vehicles. Diversions are accomplished by the use of adequate warning, delineation and channelization techniques, as noted above, in addition to the requirements for effective detours as outlined in Segment 1.

For the remaining .05 mile of this segment the westbound lane of 18th Avenue will be used for access and necessitate the use of proper pavement marking, signs and or use of other traffic control devices, consistent with one-lane traffic control, that are effective under varying conditions of light and weather. Modification of these traffic control measures or working conditions may be required to expedite traffic movement and to promote worker safety.

Segment 3 – MP 4.01 to MP 5.00

For Segment 3, beginning at milepost 4.01 to 4.23, the effective use of diversions will be required to allow restricted traffic to use the road shoulder along 18th Avenue for access. From milepost 4.23 to milepost 5.00, local residents and emergency vehicles will utilize the westbound lane for ingress and egress. The traffic control measures for both of these scenarios will be implemented as outlined in Segments 1 and 2. Near the mid-point of this segment, milepost 4.41 constitutes the approach to the crossing of C&D Boulevard. The proximity of the road to a canal requires the road to be conventionally bored. The boring of the road negates the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow.

Towards the end of this segment, near milepost 4.93, is the proposed open-cut crossing on South Broadway Road. While the roadway is being open-cut for the installation of the pipeline, southbound traffic on South Broadway will be detoured east or west on Seeley Avenue. Traffic detoured east will use C&D Boulevard for north and south traffic flow and motorists detoured west will utilize Lovekin Boulevard. South Broadway terminates at 18th Avenue, thus relieving the need for detour measures to handle northbound traffic flow.

Segment 4 – MP 5.01 to MP 6.00

For Segment 4, beginning at milepost 5.01 to 6.00, the effective use of diversions will be required to allow restricted traffic to use the road shoulder along 18th Avenue for access. Near the mid-section of this segment, milepost 5.42 constitutes the approach to the crossing of Lovekin Boulevard. The proximity of the road to a canal requires the road to be conventionally bored. The boring of the road does not require that traffic be detoured but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. Following the road crossing is a 1,250-foot-long section, ending at milepost 5.66, that runs north of the proposed contractor's staging area. Again, the use of diversions will be required to facilitate the use of the road shoulder for restricted vehicular access. The contractor may elect to install this portion of the 18th Avenue construction last to maintain access to the staging area during installation of all other segments.

A mainline valve for the 42-inch pipeline will be constructed adjacent to the existing mainline valve on the south side of 18th Avenue within this same 1,250-foot section.

Segment 5 – MP 6.01 to MP 7.00

Segment 5 will require the use of diversion traffic control measures to utilize the road shoulder from milepost 6.01 to 7.00 except for two small 300-foot sections, one near milepost 6.10 and one near milepost 6.38, where the westbound lane will be used for access. Pertinent to this segment, near milepost 6.46, is the proposed open-cut crossing of DeFrain Boulevard. While the roadway is being open-cut for the installation of the pipeline, southbound traffic on DeFrain Boulevard will be detoured east or west on Seeley Avenue and northbound traffic will be detoured east or west on 22nd Avenue. Motorists detoured east will utilize Lovekin Boulevard and motorist detoured west will use Arrowhead Boulevard, located one mile west of DeFrain Boulevard, for northbound and southbound traffic flow. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along DeFrain Boulevard.

Segment 6 – MP 7.01 to MP 8.00

Milepost 7.01 to 7.99 will require diversion traffic control measures to utilize the road shoulder for restricted vehicular access. Diversion devices include those required for the closing of a single roadway lane and those measures required to detour traffic. The final 500-foot of this segment will use the westbound lane to provide access for local residents and emergency vehicles.

Milepost 7.44 is the approach to the open cut crossing of Arrowhead Boulevard. While the roadway is being open-cut for the installation of the pipeline, southbound traffic on Arrowhead Boulevard will be detoured east or west on Seeley Avenue and northbound traffic east or west on 22nd Avenue. Motorists detoured east will utilize DeFrain Boulevard and motorist detoured west will use Neighbors Boulevard (State Route 78), located one mile west of Arrowhead Boulevard, for northbound and southbound traffic flow. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Arrowhead Boulevard.

Segment 7 – MP 8.01 to MP 9.00

From MP 8.01 to MP 8.45 westbound lane will serve as access for local residents and emergency vehicles. When using one lane for traffic control, adequate warning, delineation and channelization techniques will be necessary. Such techniques include proper pavement marking, signs or use of other traffic control devices that are affected under varying conditions of light and weather. The quantity and type of devices will be appropriate to ensure that the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers.

Milepost 8.45 represents the proposed conventional bore of State Route 78 (Neighbors Boulevard) crossing. The boring of the road negates the need to detour traffic, but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. From the west side of the highway crossing to the terminus of this segment, diversion traffic control measures will be implemented. As with all segments of construction along 18th Avenue, traffic control zones will be carefully monitored under varying conditions of traffic volume, light and weather to ensure that traffic control measures are operating effectively and that all devices are clearly visible, clean and in good repair. Modification of traffic controls or working conditions may be required to expedite traffic movement and to promote worker safety.

Segment 8 – MP 9.01 TO MP 10.00

For the entire length of Segment 8, the westbound lane will be needed to provide restricted access for local residents and emergency vehicles. One-lane traffic control along Segment 8 will be accomplished by the use of adequate warning, delineation and channelization techniques. Such techniques include, proper pavement marking, signs or use of other traffic control devices that are effect under varying conditions of light and weather. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers.

Approximately halfway through this section, at milepost 9.46, is the proposed open-cut crossing of Stephenson Boulevard. While the roadway is being open-cut for the installation of the pipeline, southbound traffic on Stephenson Boulevard will be detoured east on Seeley Avenue and northbound traffic east on 22nd Avenue. Motorists detoured east will then utilize Neighbors Boulevard (State Route 78), located one mile east of Stephenson Boulevard, for northbound and southbound traffic flow. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Stephenson Boulevard.

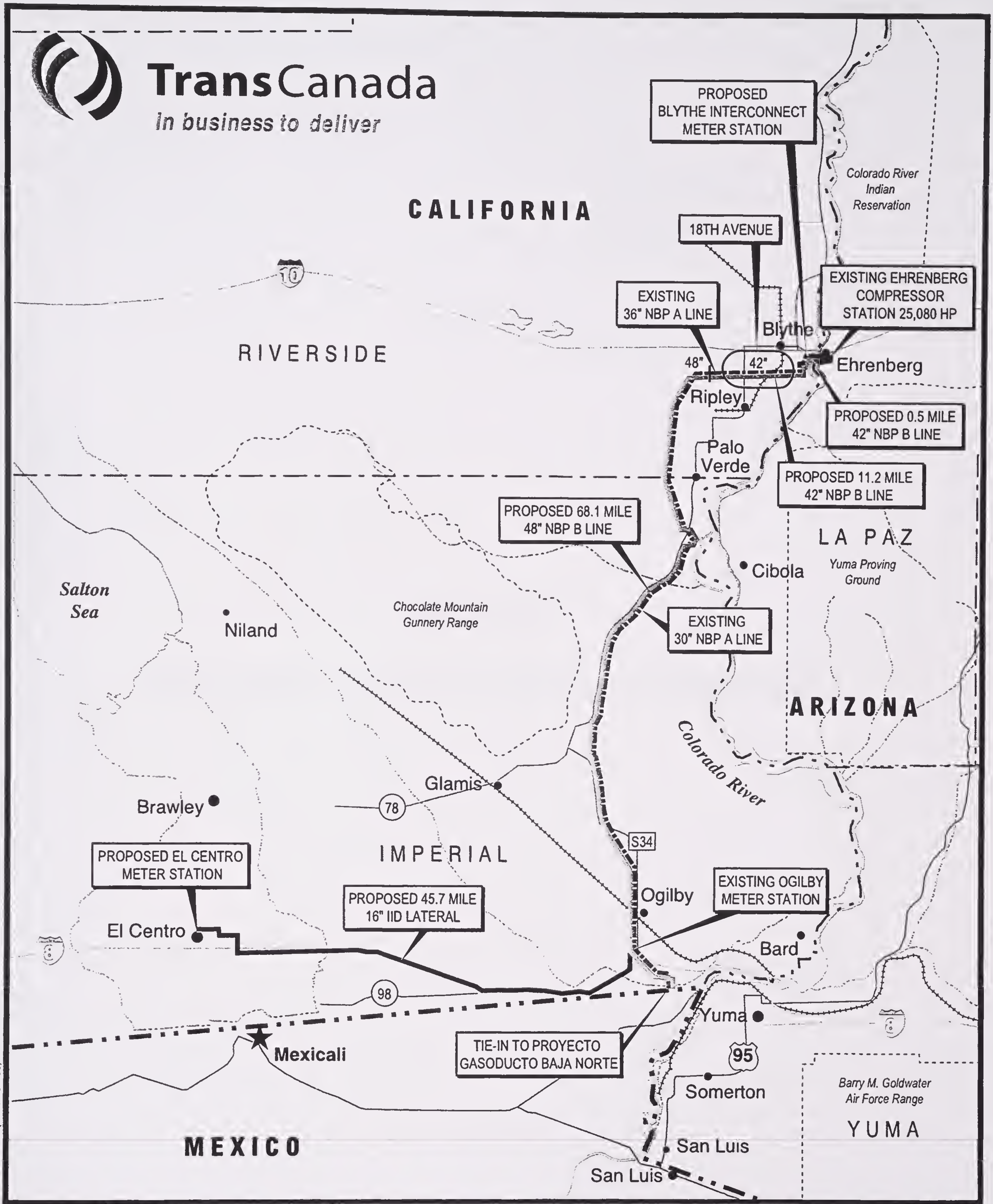
Segment 9 – MP 10.01 TO MP 10.50

Diversion traffic control measures are needed to allow for limited traffic flow along the south shoulder of 18th Avenue between milepost 10.01 to 10.42. From milepost 10.42 to the end of the segment near milepost 10.50 the westbound lane will be utilized for access. As with the all other construction segments along 18th Avenue, the traffic control requirements for these two scenarios remain the same. Milepost 10.47 within this segment constitutes the proposed conventional road bore of Keim Boulevard. The boring of the road relieves the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow.

EXHIBITS

EXHIBIT A

18TH AVENUE PIPELINE ROUTE GENERAL VICINITY MAP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CALIFORNIA
10
RIVERSIDE
PROPOSED BLYTHE INTERCONNECT METER STATION
Colorado River Indian Reservation
18TH AVENUE
EXISTING EHRENBERG COMPRESSOR STATION 25,080 HP
EXISTING 36" NBP A LINE
Blythe
48"
42"
Ehrenberg
Ripley
PROPOSED 0.5 MILE 42" NBP B LINE
Palo Verde
PROPOSED 11.2 MILE 42" NBP B LINE
PROPOSED 68.1 MILE 48" NBP B LINE
LA PAZ
Yuma Proving Ground
Cibola
Salton Sea
Niland
Chocolate Mountain Gunnery Range
EXISTING 30" NBP A LINE
ARIZONA
Colorado River
Glamis
Brawley
78
IMPERIAL
S34
PROPOSED EL CENTRO METER STATION
PROPOSED 45.7 MILE 16" IID LATERAL
Ogilby
EXISTING OGILBY METER STATION
El Centro
8
Bard
98
Yuma
8
Mexicali
TIE-IN TO PROYECTO GASODUCTO BAJA NORTE
95
Somerton
Barry M. Goldwater Air Force Range
YUMA
MEXICO
San Luis
San Luis

LEGEND

- Existing NBP A Line
- Proposed NBP B Line
- Proposed IID Lateral

18TH AVENUE
PIPELINE ROUTE GENERAL VICINITY MAP

FEBRUARY 2006

EXHIBIT A

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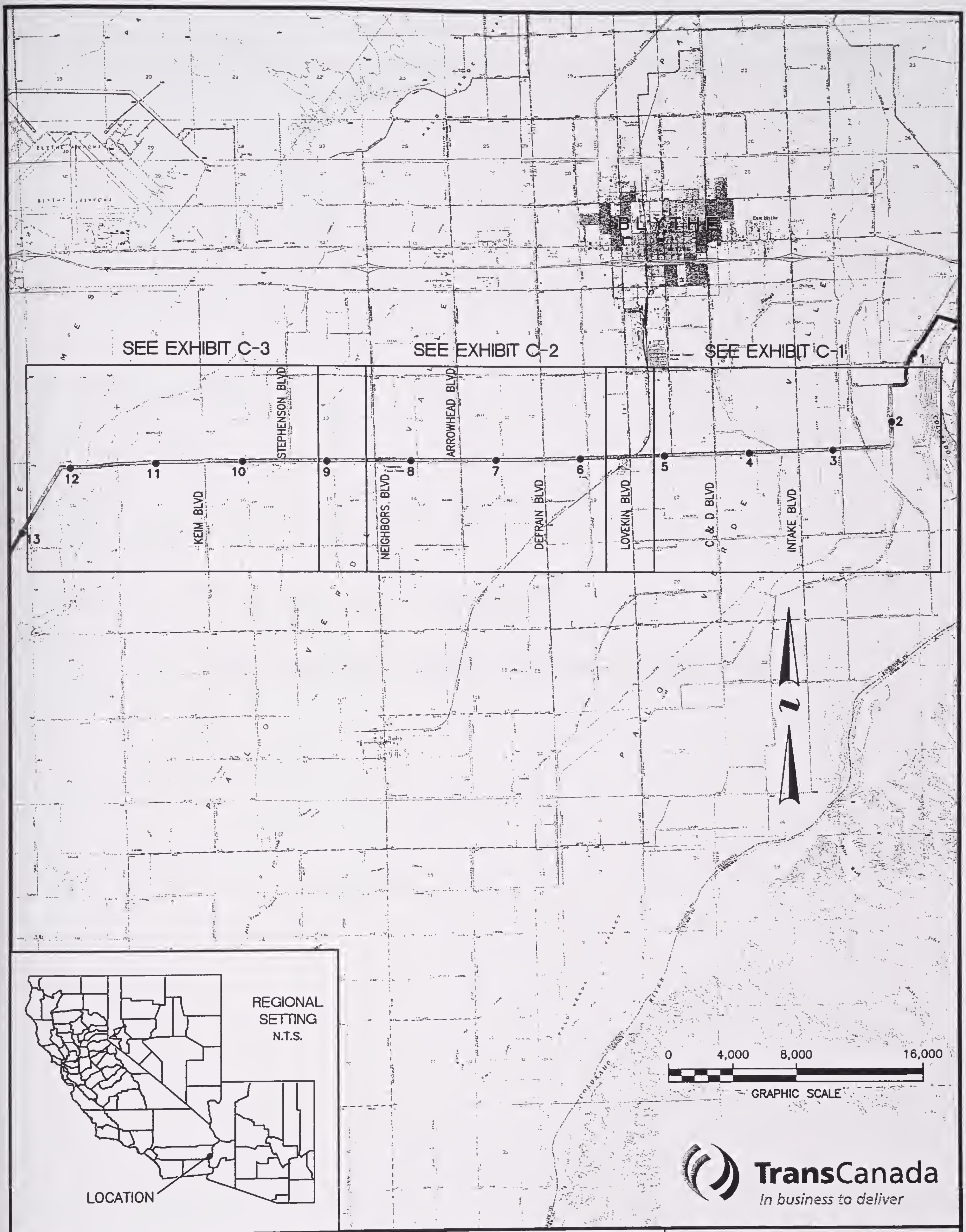
EXHIBIT B

18TH AVENUE CONSTRUCTION PLAN VICINITY MAP



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18TH AVENUE
TRAFFIC PLAN
VICINITY MAP
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES N/A
SHEET 1 OF 1 SHEETS
DRAWING NUMBER
EXHIBIT B
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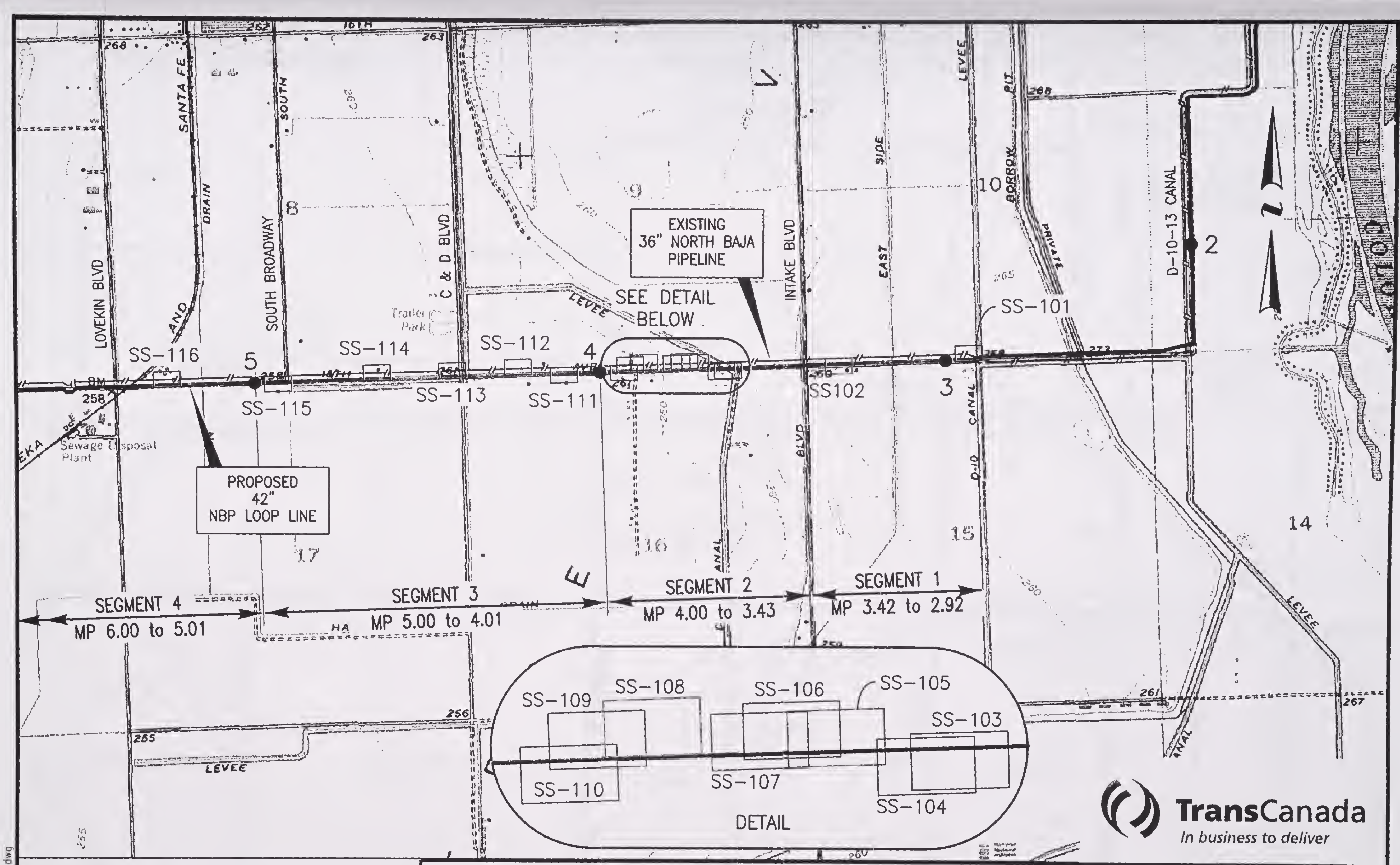
EXHIBIT C

18TH AVENUE TRAFFIC PLAN LOCATION MAP



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18TH AVENUE
TRAFFIC PLAN
LOCATION MAP
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES N/A
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EXHIBIT C-1
REV
A

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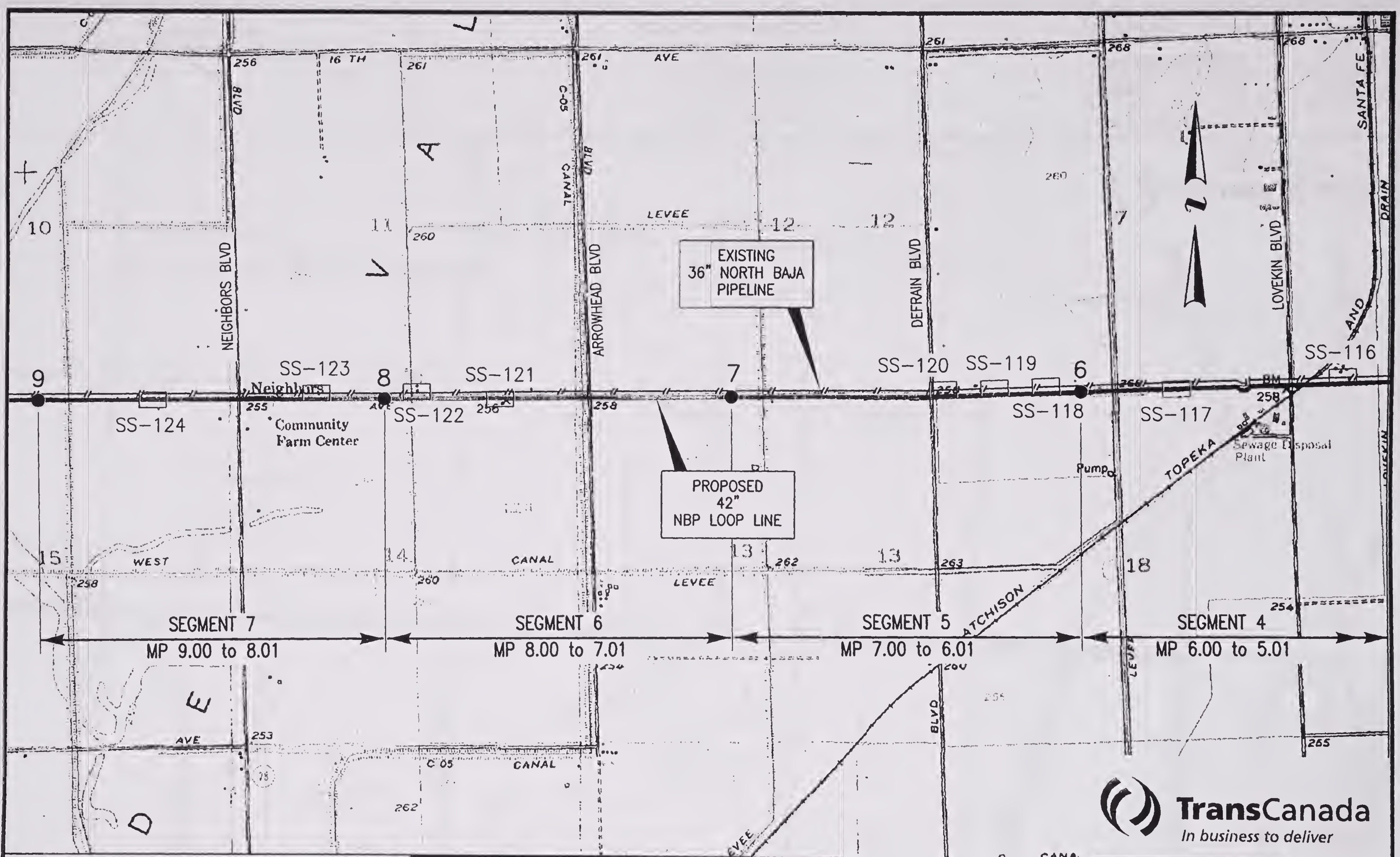

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18TH AVENUE
TRAFFIC PLAN
LOCATION MAP
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES N/A	
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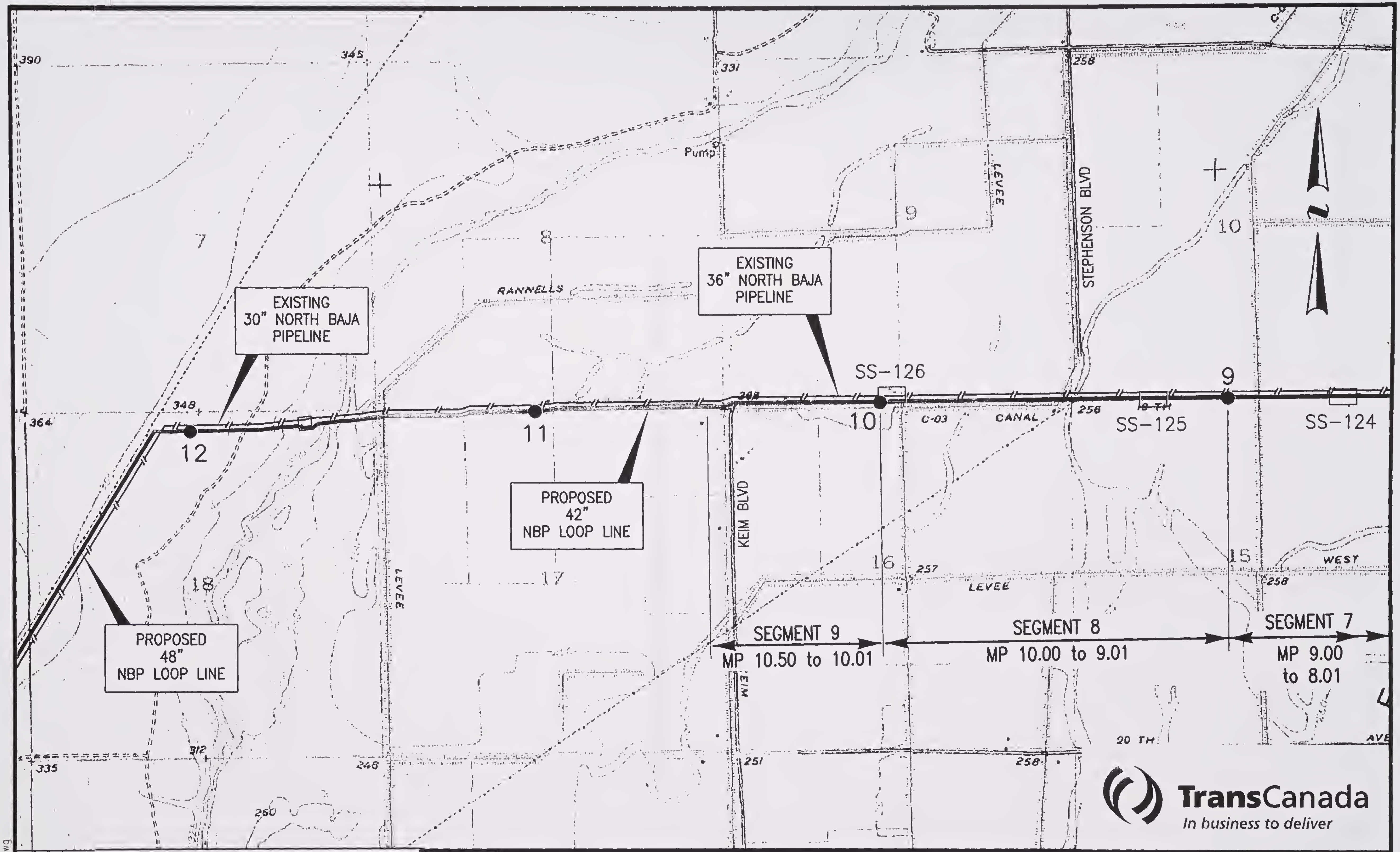

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18TH AVENUE
TRAFFIC PLAN
LOCATION MAP
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES N/A
SHEET 3 OF 3 SHEETS

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EXHIBIT C-3	A

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ATTACHMENT A

TYPICAL TRAFFIC CONTROL MEASURES

Table 6C-1. Suggested Advance Warning Sign Spacing

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	30 (100)	30 (100)	30 (100)
Urban (high speed)*	100 (350)	100 (350)	100 (350)
Rural	150 (500)	150 (500)	150 (500)
Expressway / Freeway	300 (1,000)	450 (1,500)	800 (2,640)

* Speed category to be determined by highway agency

** Distances are shown in meters (feet). The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The third sign is the first one in a three-sign series encountered by a driver approaching a TTC zone.)

Figure 6E-1. Use of Hand-Signaling Devices by Flaggers

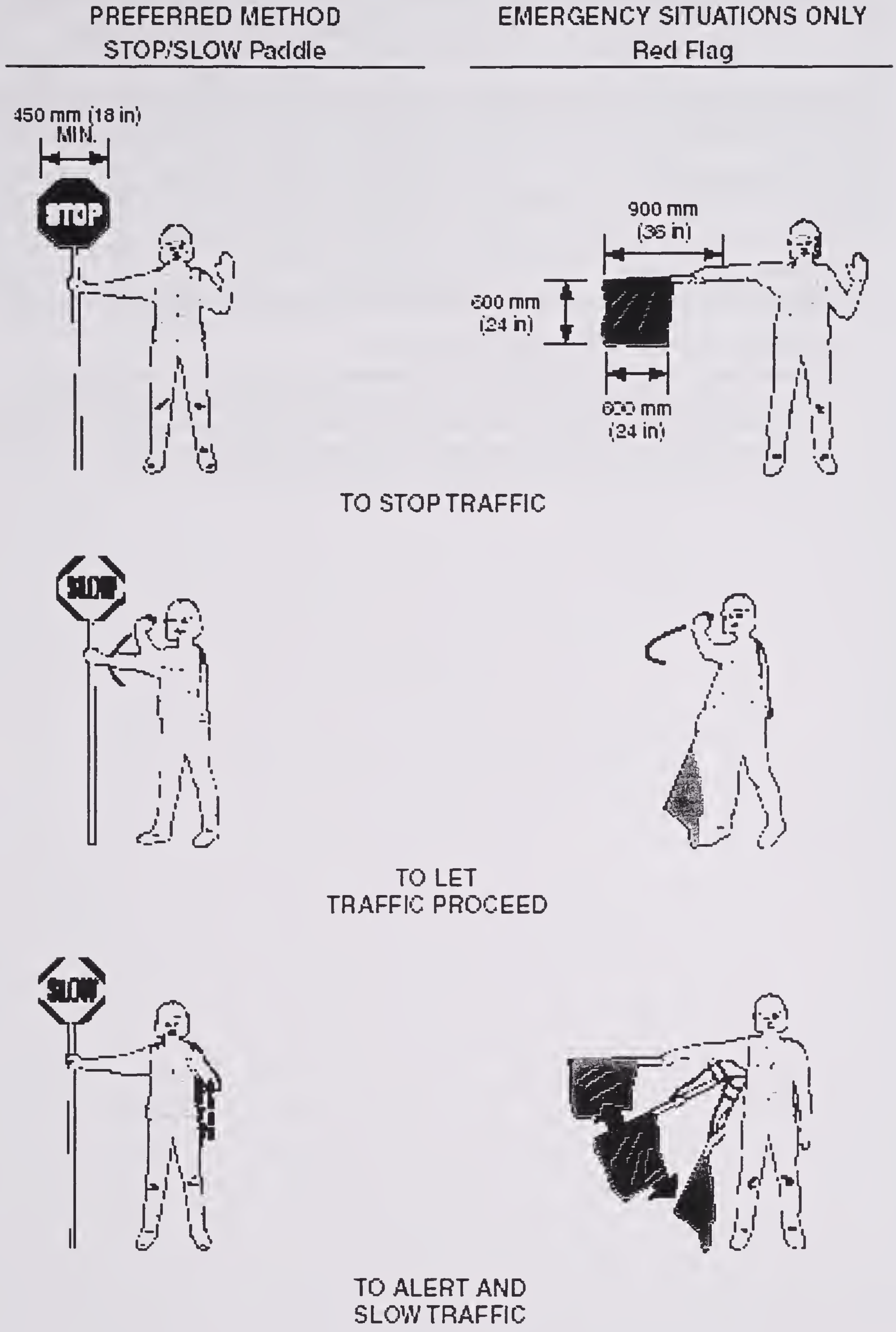
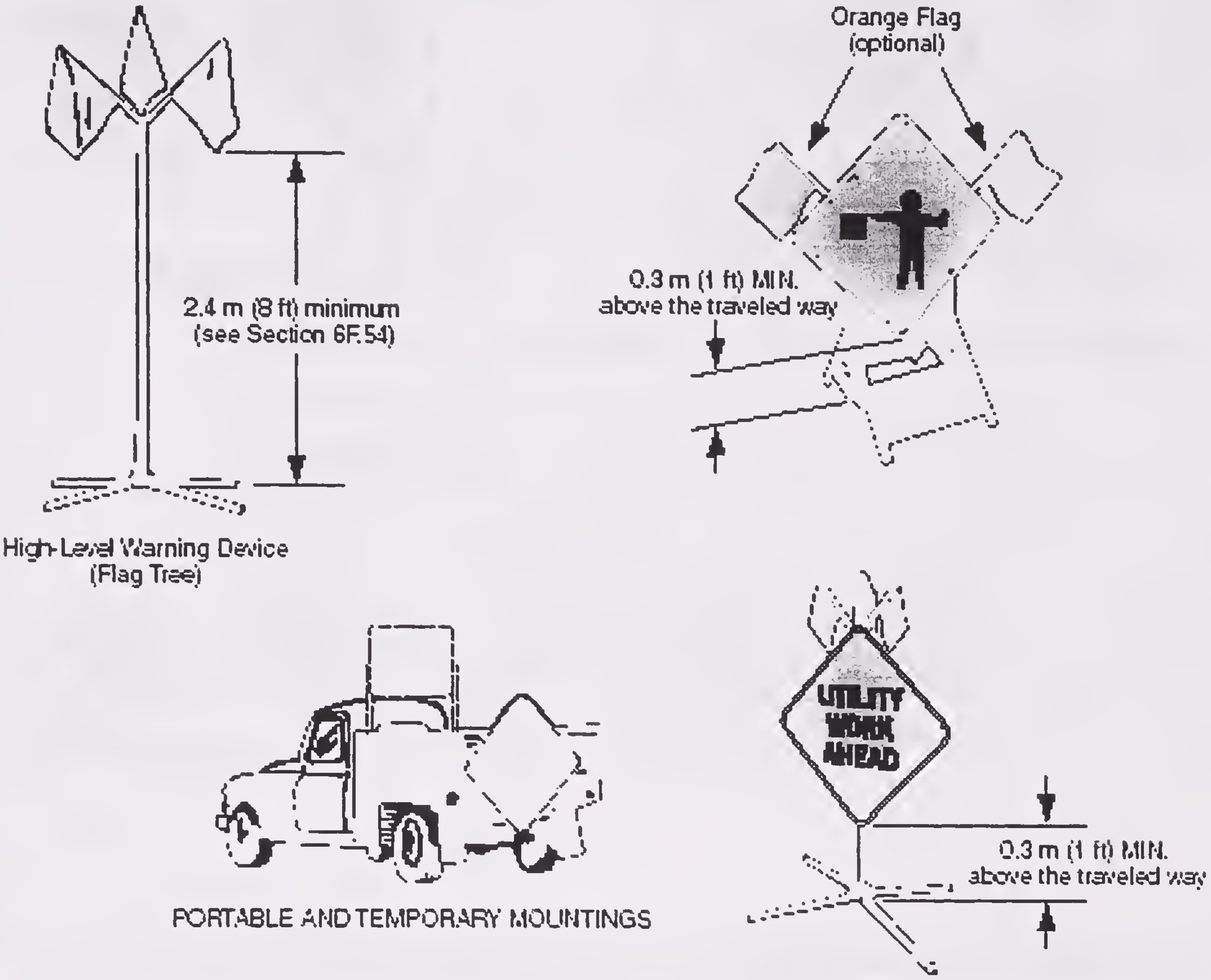
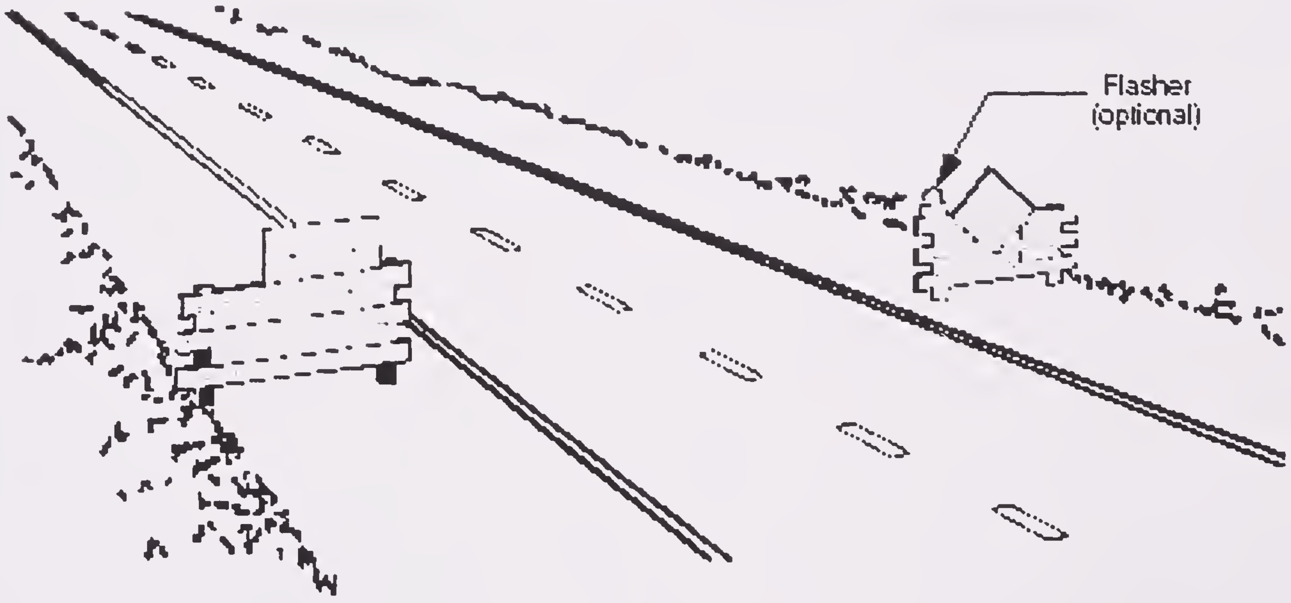


Figure 6F-2. Methods of Mounting Signs Other Than on Posts

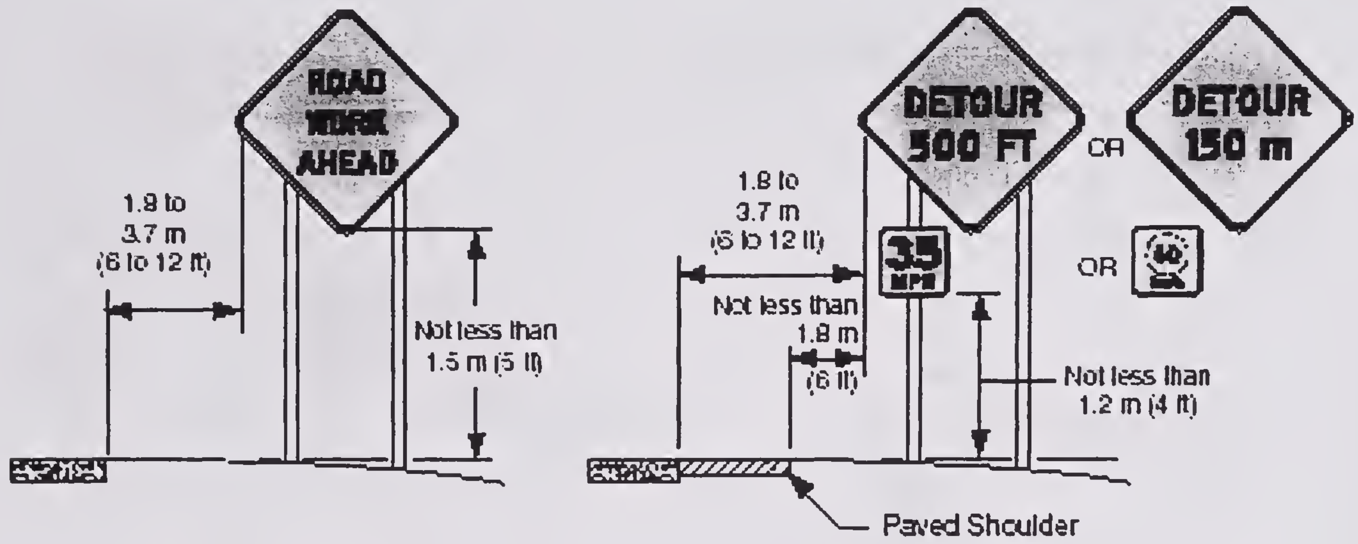


PORTABLE AND TEMPORARY MOUNTINGS



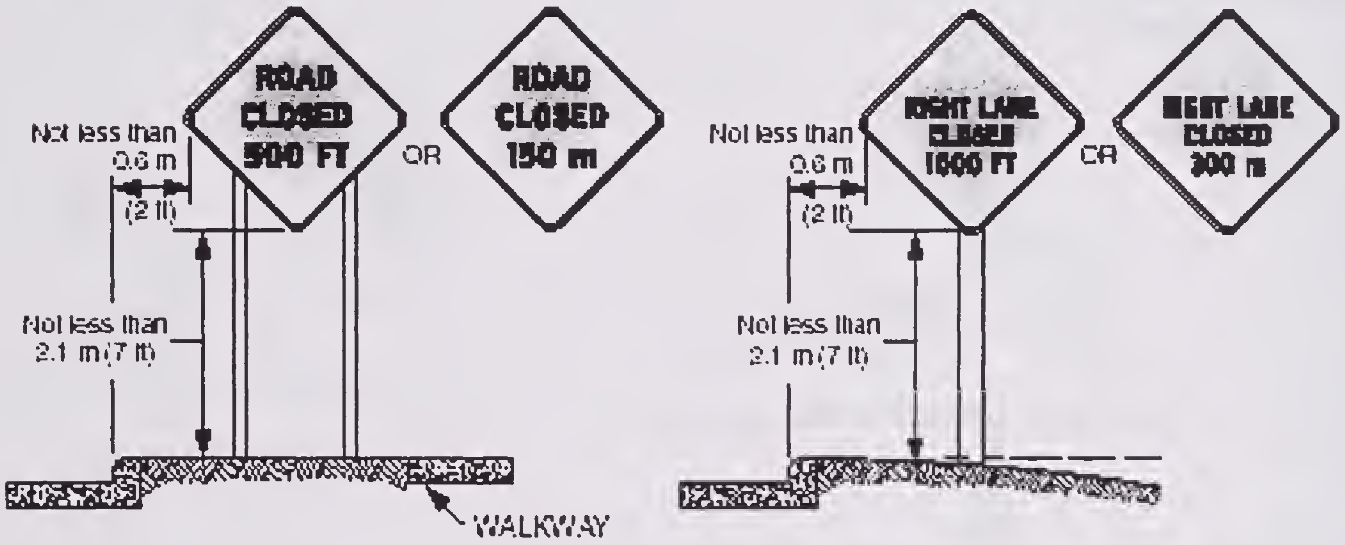
BARRICADES

Figure 6F-1. Height and Lateral Location of Signs—Typical Installations


ROAD WORK AHEAD
1.8 to 3.7 m (6 to 12 ft)
Not less than 1.5 m (5 ft)
DETOUR 500 FT
OR
DETOUR 150 m
1.8 to 3.7 m (6 to 12 ft)
35 MPH
OR
60 km/h
Not less than 1.8 m (6 ft)
Not less than 1.2 m (4 ft)
Paved Shoulder

RURAL DISTRICT

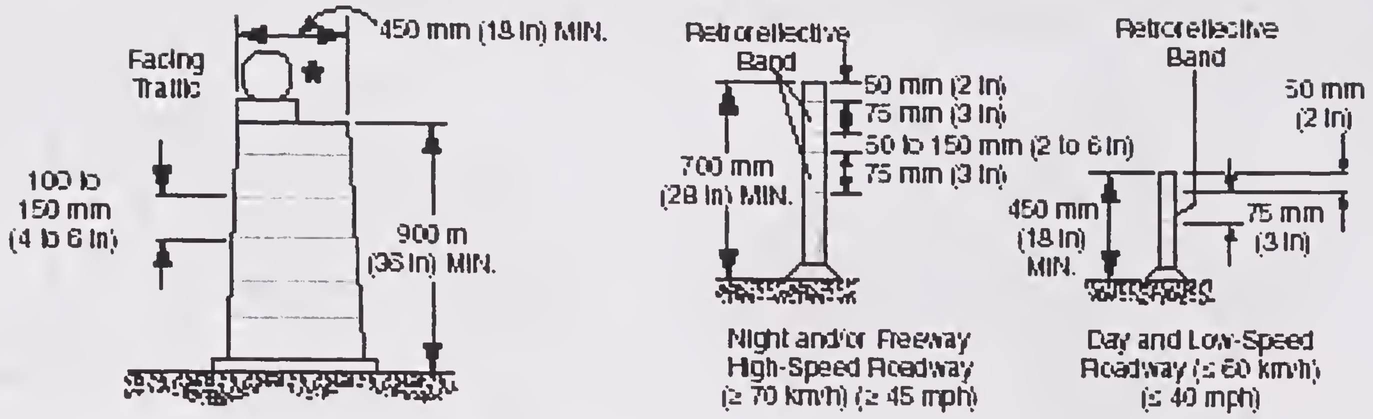
RURAL DISTRICT WITH ADVISORY SPEED PLATE


ROAD CLOSED 500 FT
OR
ROAD CLOSED 150 m
Not less than 0.6 m (2 ft)
Not less than 2.1 m (7 ft)
WALKWAY
RIGHT LANE CLOSED 1000 FT
OR
RIGHT LANE CLOSED 300 m
Not less than 0.6 m (2 ft)
Not less than 2.1 m (7 ft)

URBAN DISTRICT

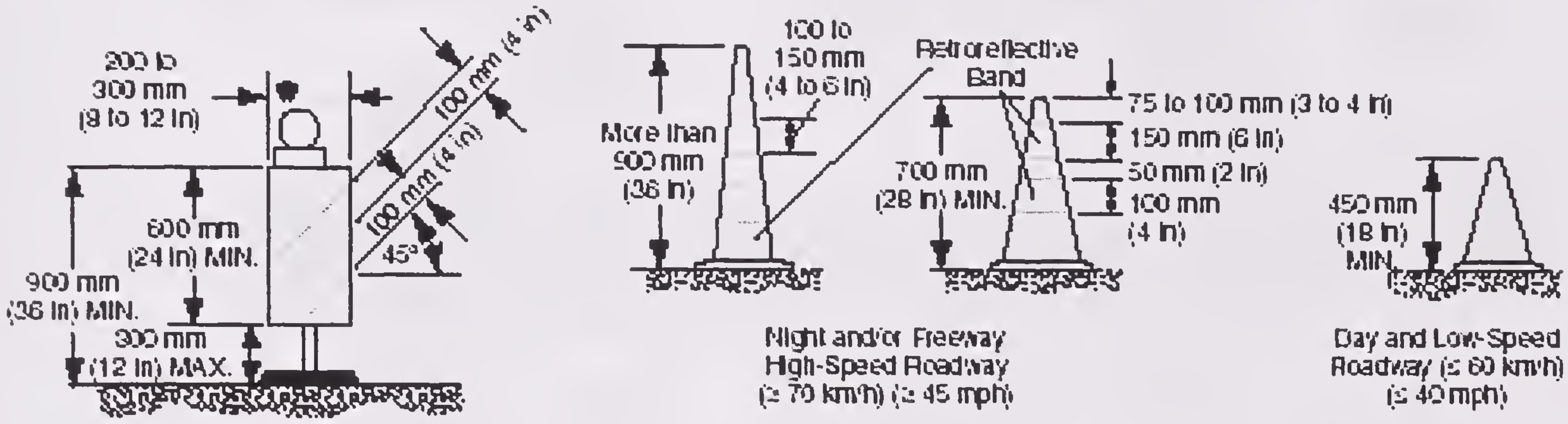
URBAN DISTRICT

Figure 6F-7. Channelizing Devices (Sheet 1 of 2)



DRUM

TUBULAR MARKERS



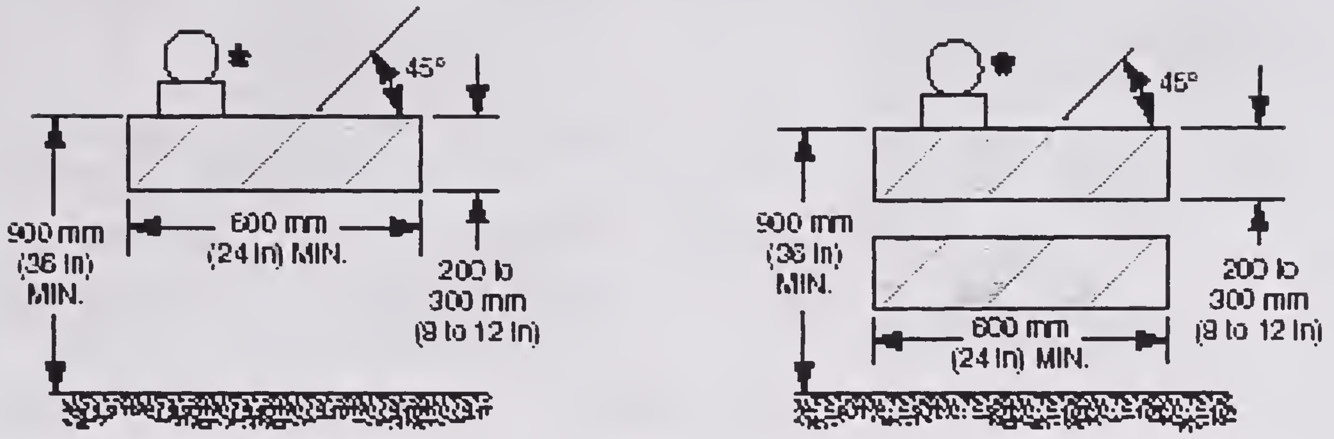
VERTICAL PANEL

CONES

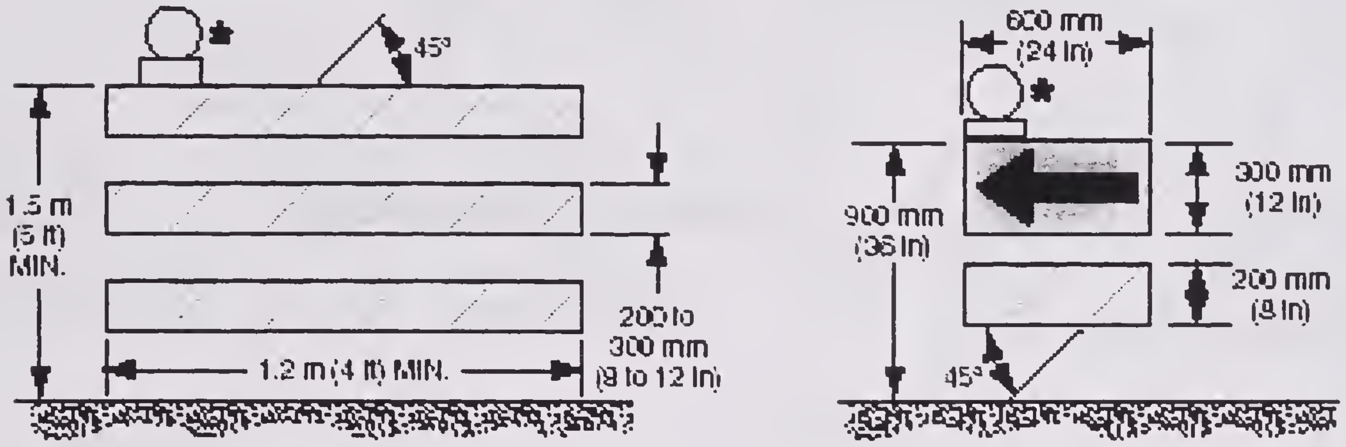
* Warning lights (optional)

Note: If drums, cones, or tubular markers are used to channelize pedestrians, they shall be located such that there are no gaps between the bases of the devices, in order to create a continuous bottom, and the height of each individual drum, cone, or tubular marker shall be no less than 900 mm (36 in) to be detectable to users of long canes.

Figure 6F-7. Channelizing Devices (Sheet 2 of 2)



TYPE I BARRICADE ** TYPE II BARRICADE **



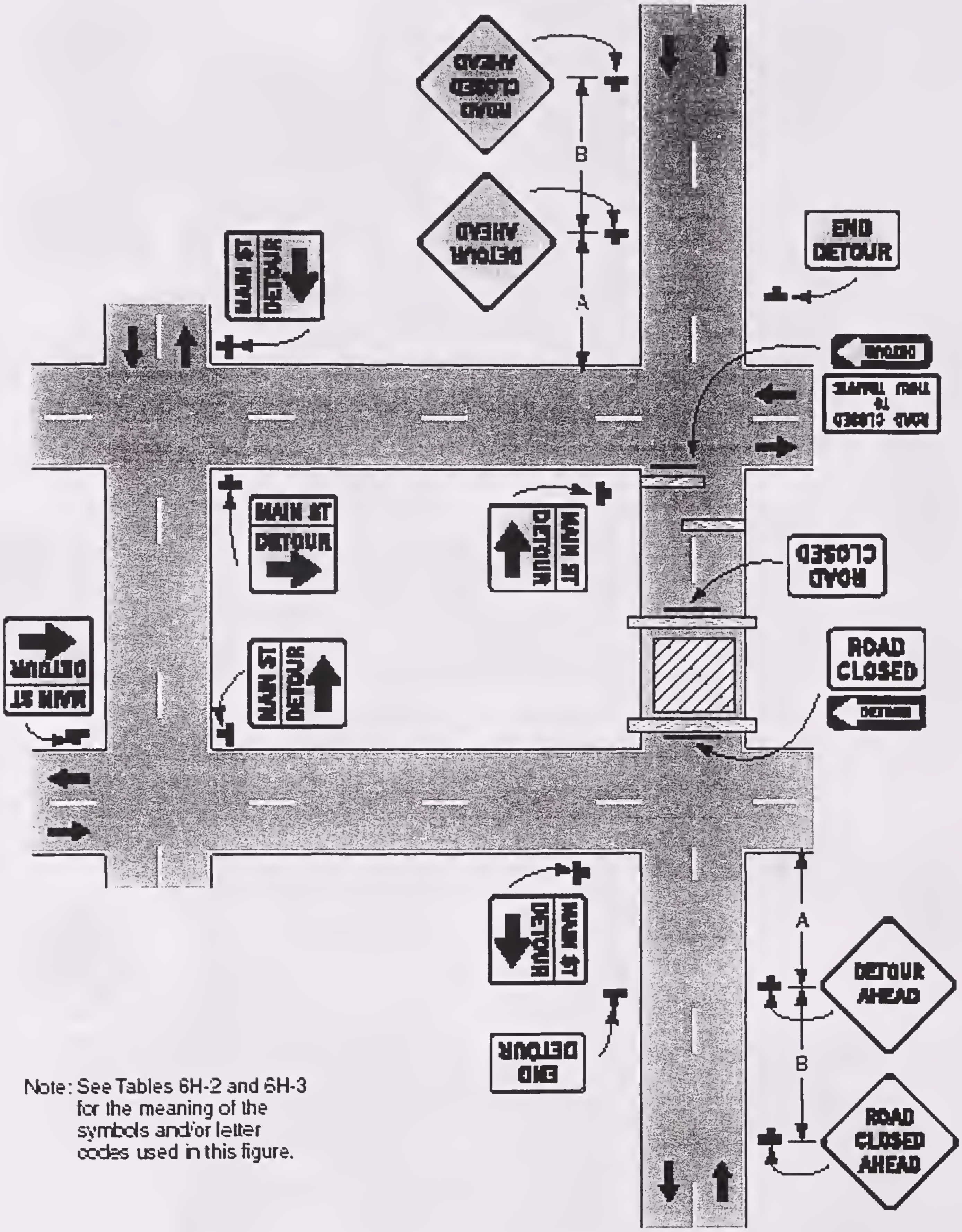
TYPE III BARRICADE ** DIRECTION INDICATOR BARRICADE **

* Warning lights (optional)

** Rail stripe widths shall be 150 mm (6 in), except that 100 mm (4 in) wide stripes may be used if rail lengths are less than 900 mm (36 in). The sides of barricades facing traffic shall have retroreflective rail faces.

Note: If barricades are used to channelize pedestrians, there shall be continuous detectable bottom and top rails with no gaps between individual barricades to be detectable to users of long canes. The bottom of the bottom rail shall be no higher than 150 mm (6 in) above the ground surface. The top of the top rail shall be no lower than 900 mm (36 in) above the ground surface.

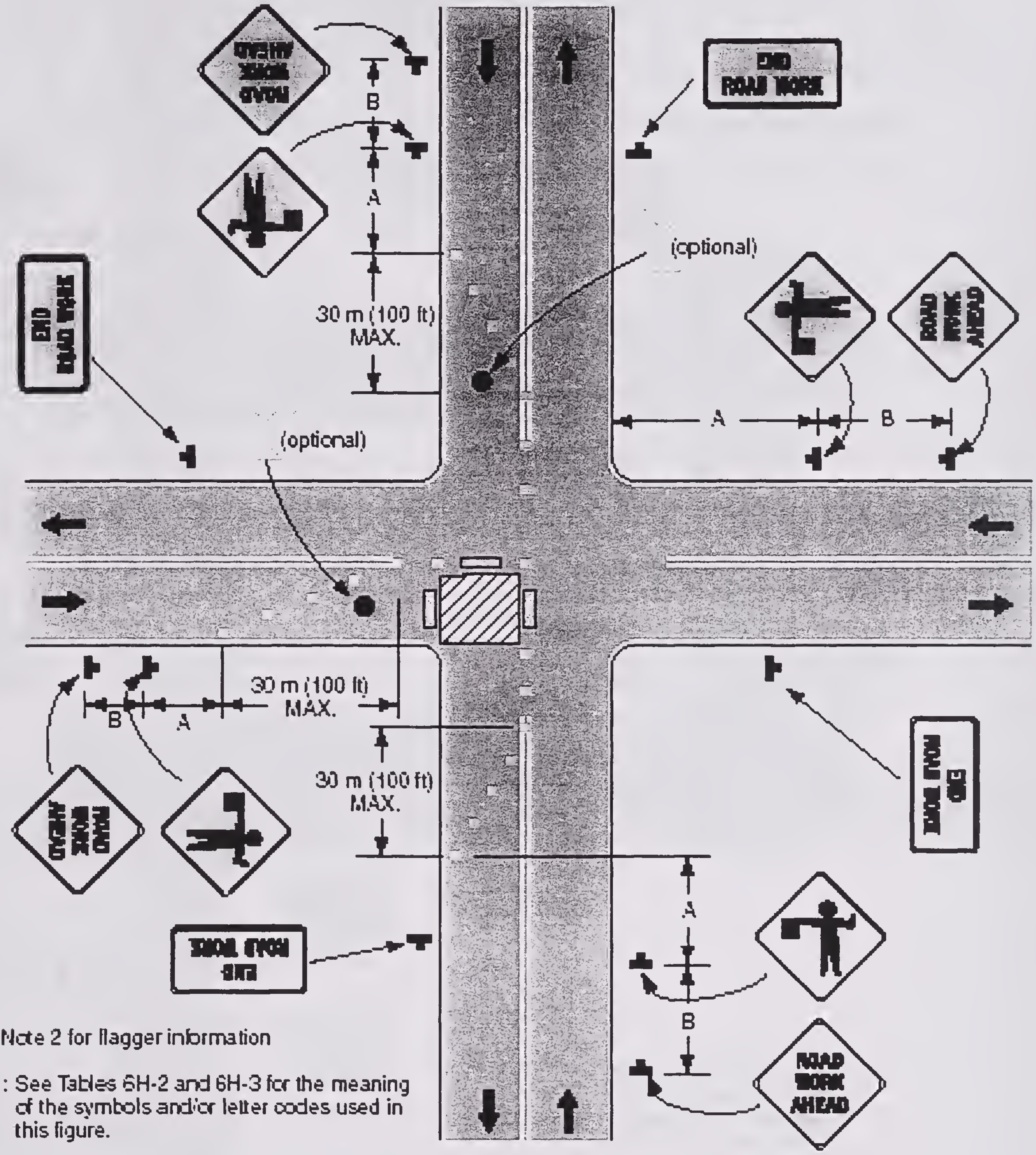
Figure 6H-20. Detour for Closed Street (TA-20)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 20

Figure 6H-27. Closure at Side of Intersection (TA-27)

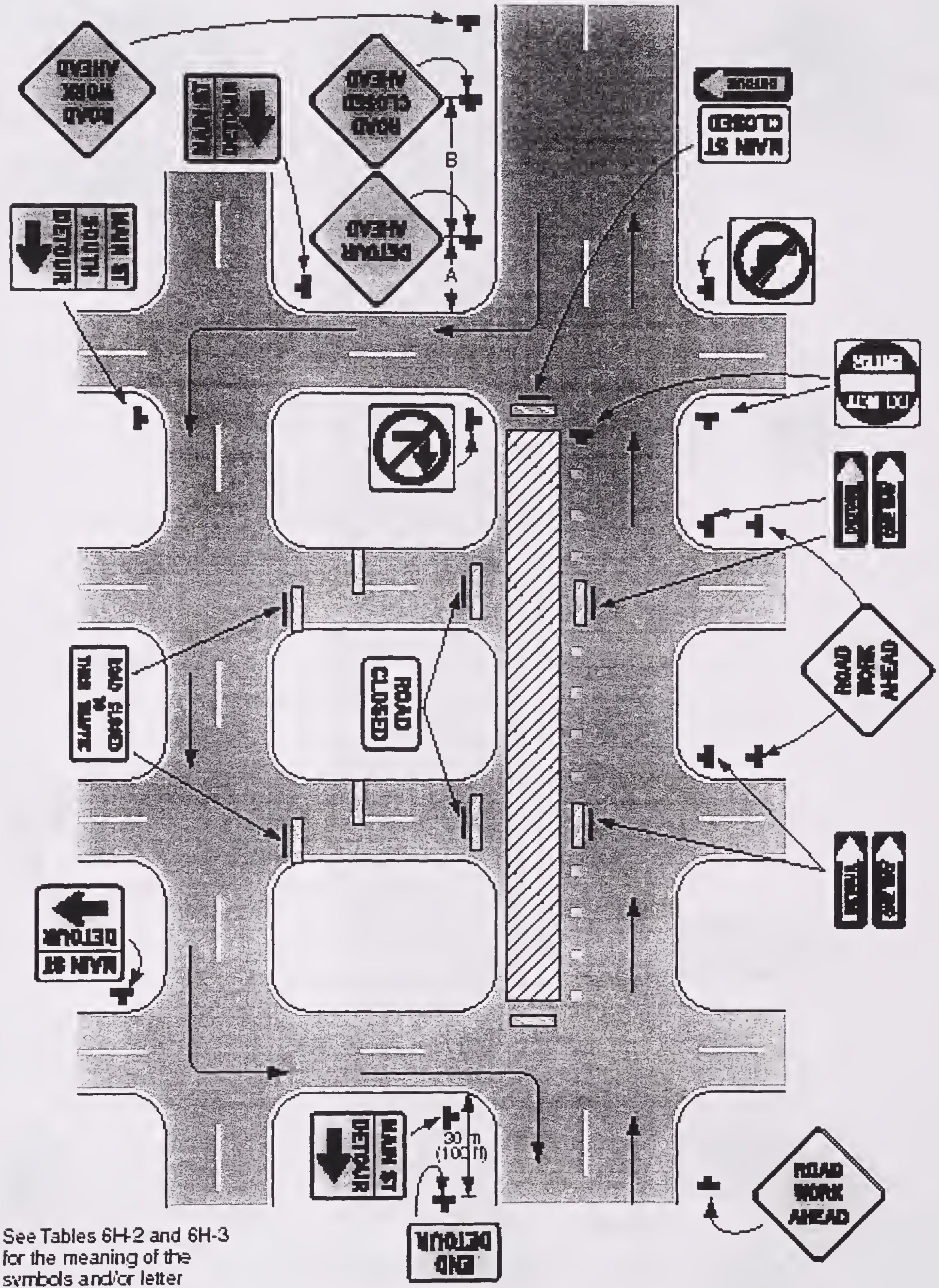


See Note 2 for flagger information

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 27

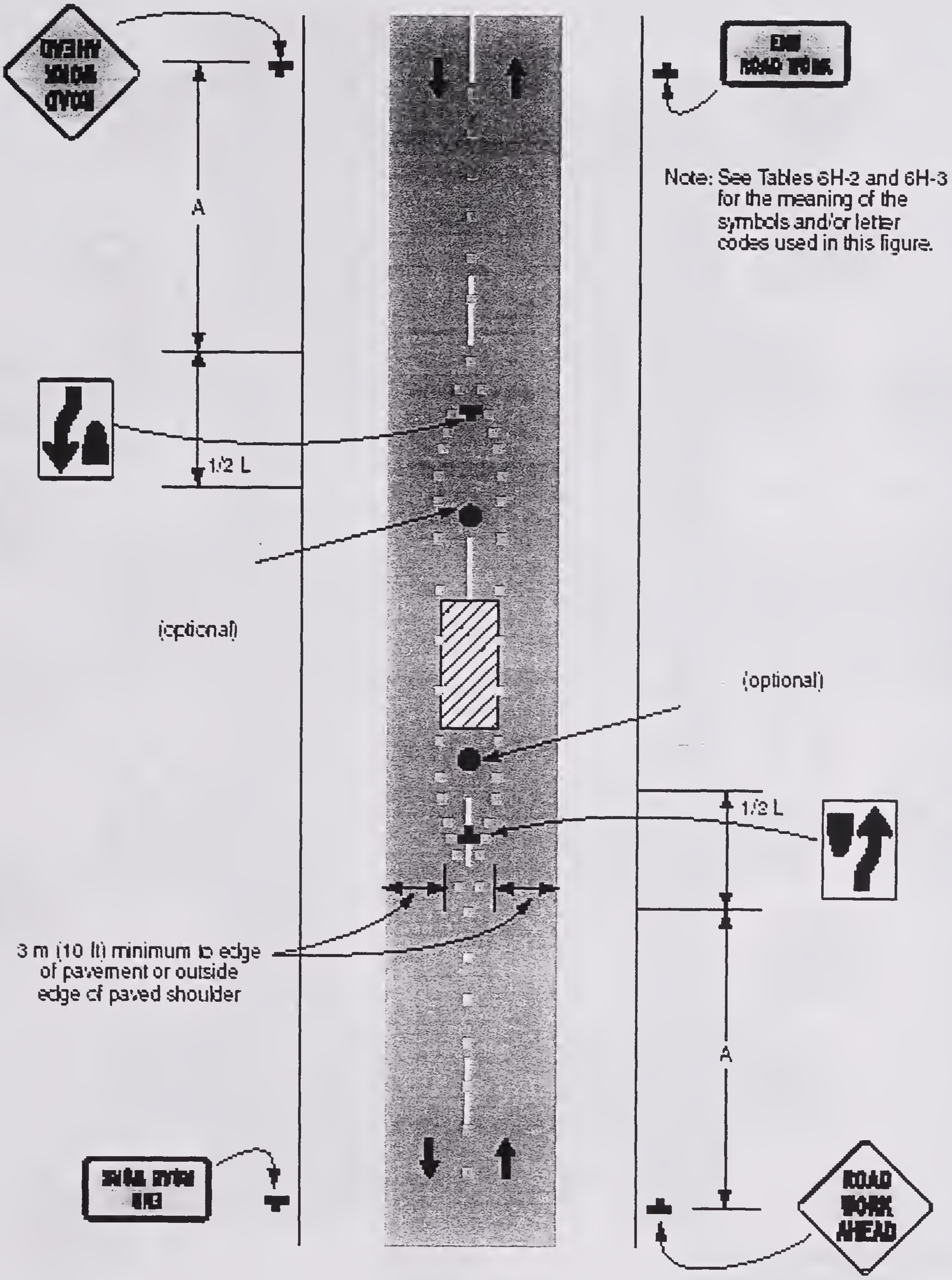
Figure 6H-19. Detour for One Travel Direction (TA-19)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 19

Figure 6H-15. Work in Center of Road with Low Traffic Volumes (TA-15)

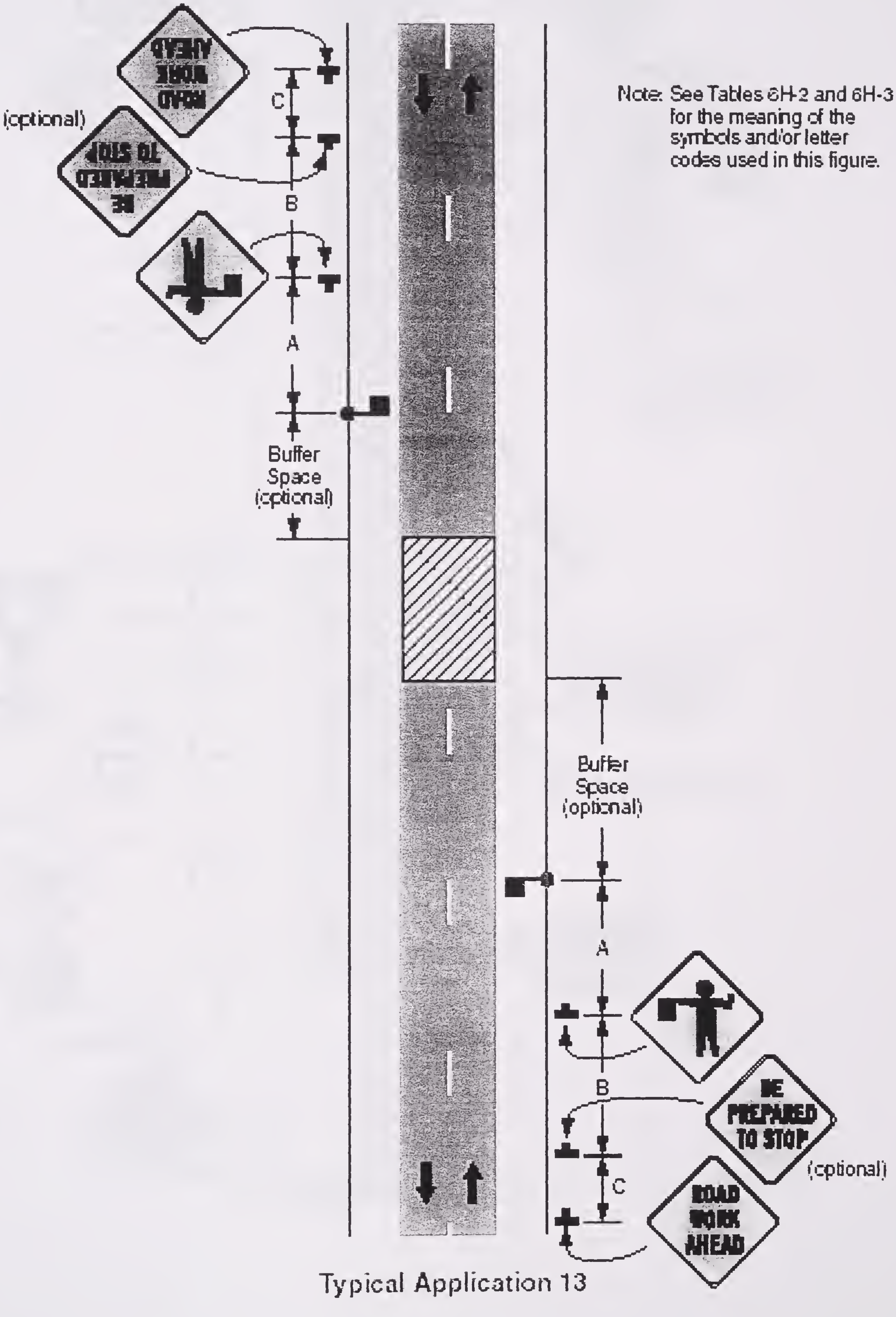


Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

3 m (10 ft) minimum to edge of pavement or outside edge of paved shoulder

Typical Application 15

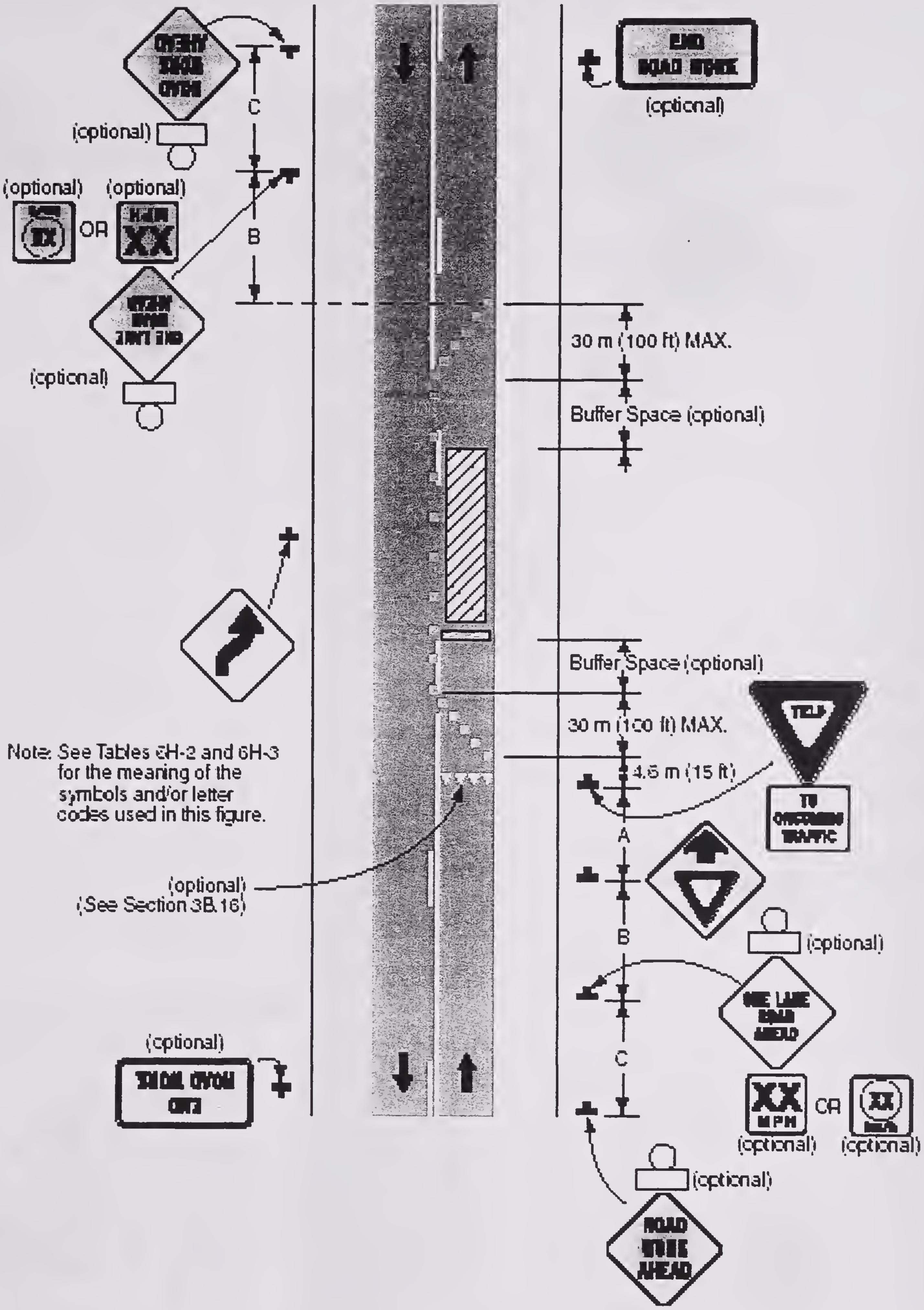
Figure 6H-13. Temporary Road Closure (TA-13)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 13

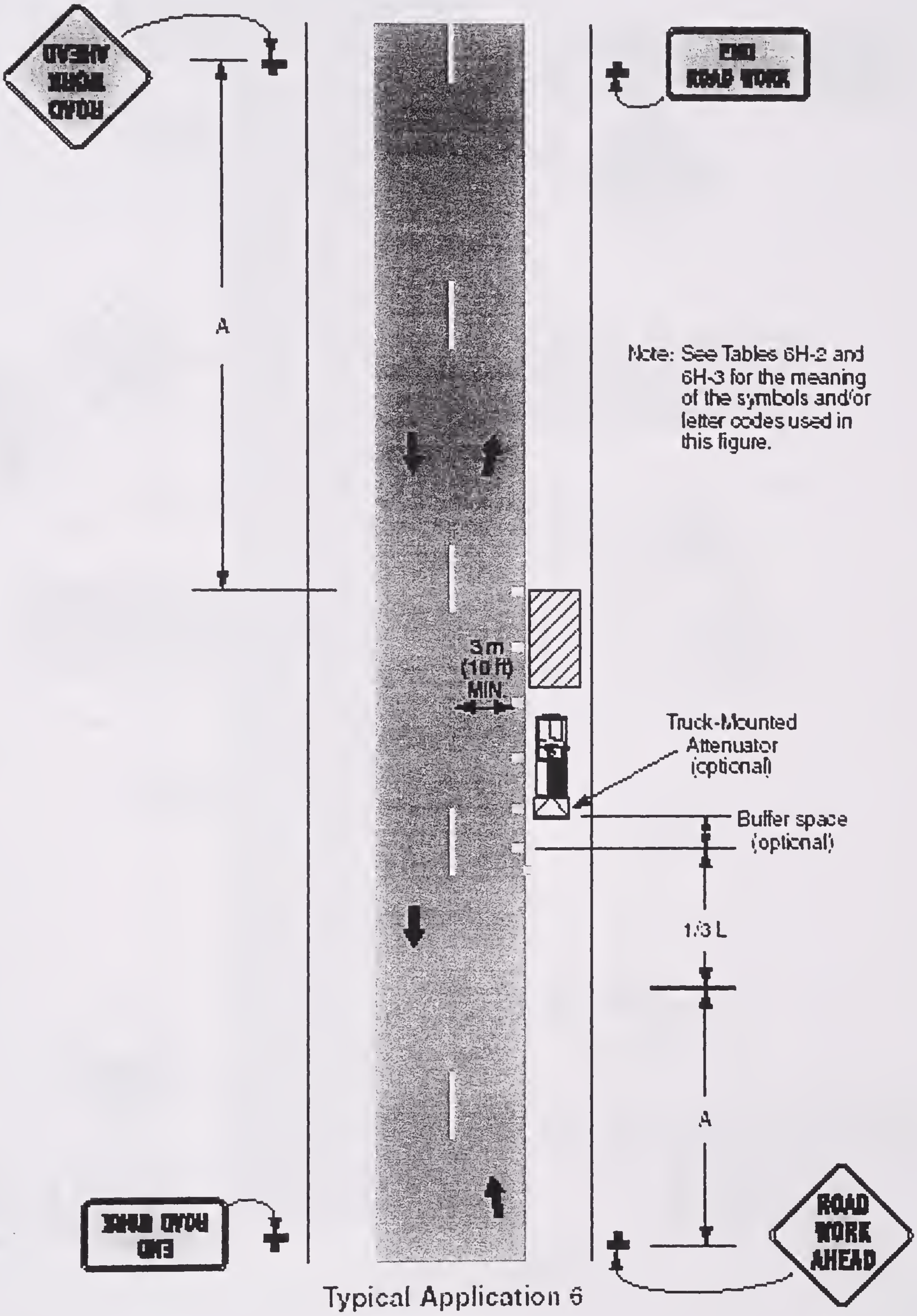
Figure 6H-11. Lane Closure on Two-Lane Road with Low Traffic Volumes



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 11

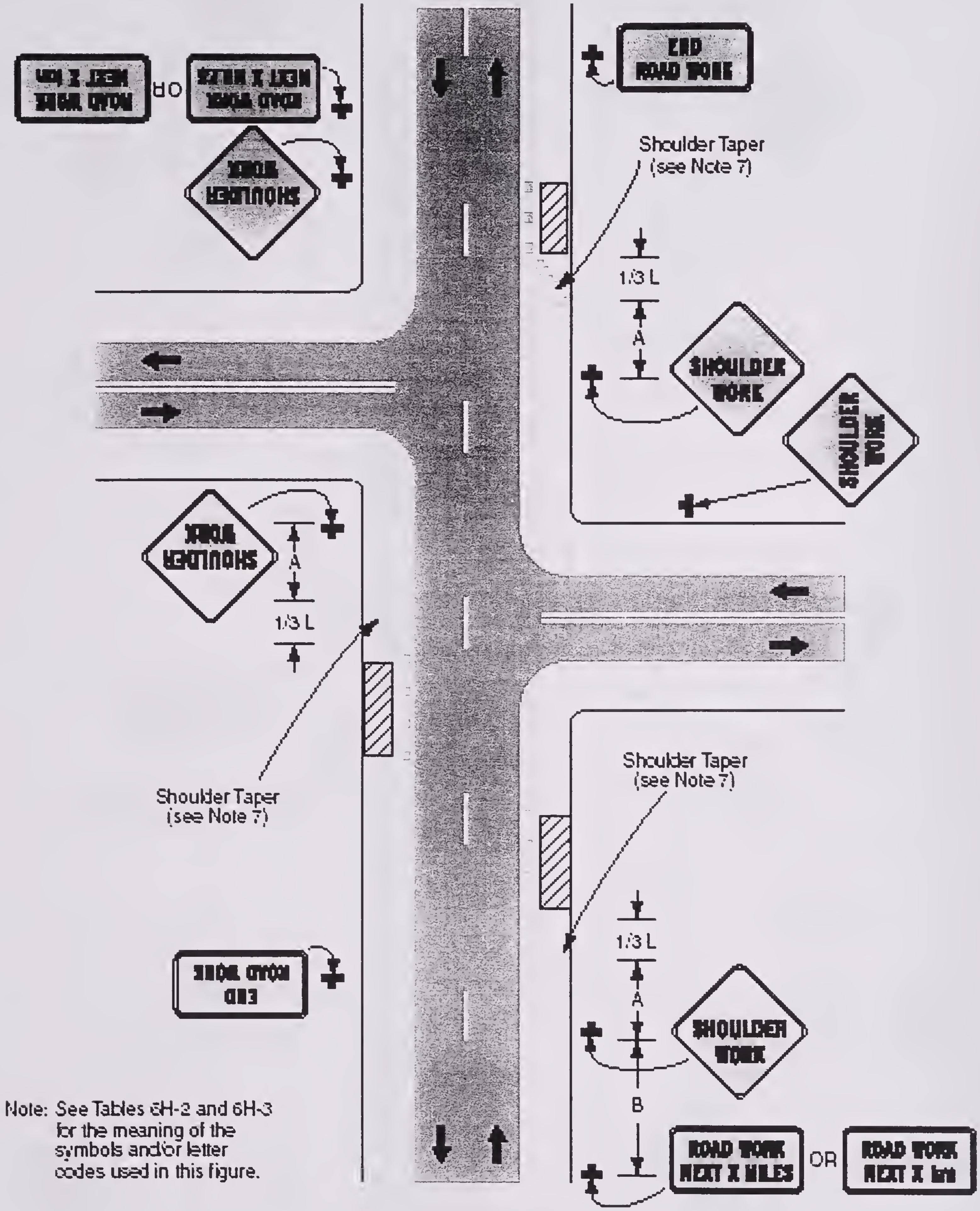
Figure 6H-6. Shoulder Work with Minor Encroachment (TA-6)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 6

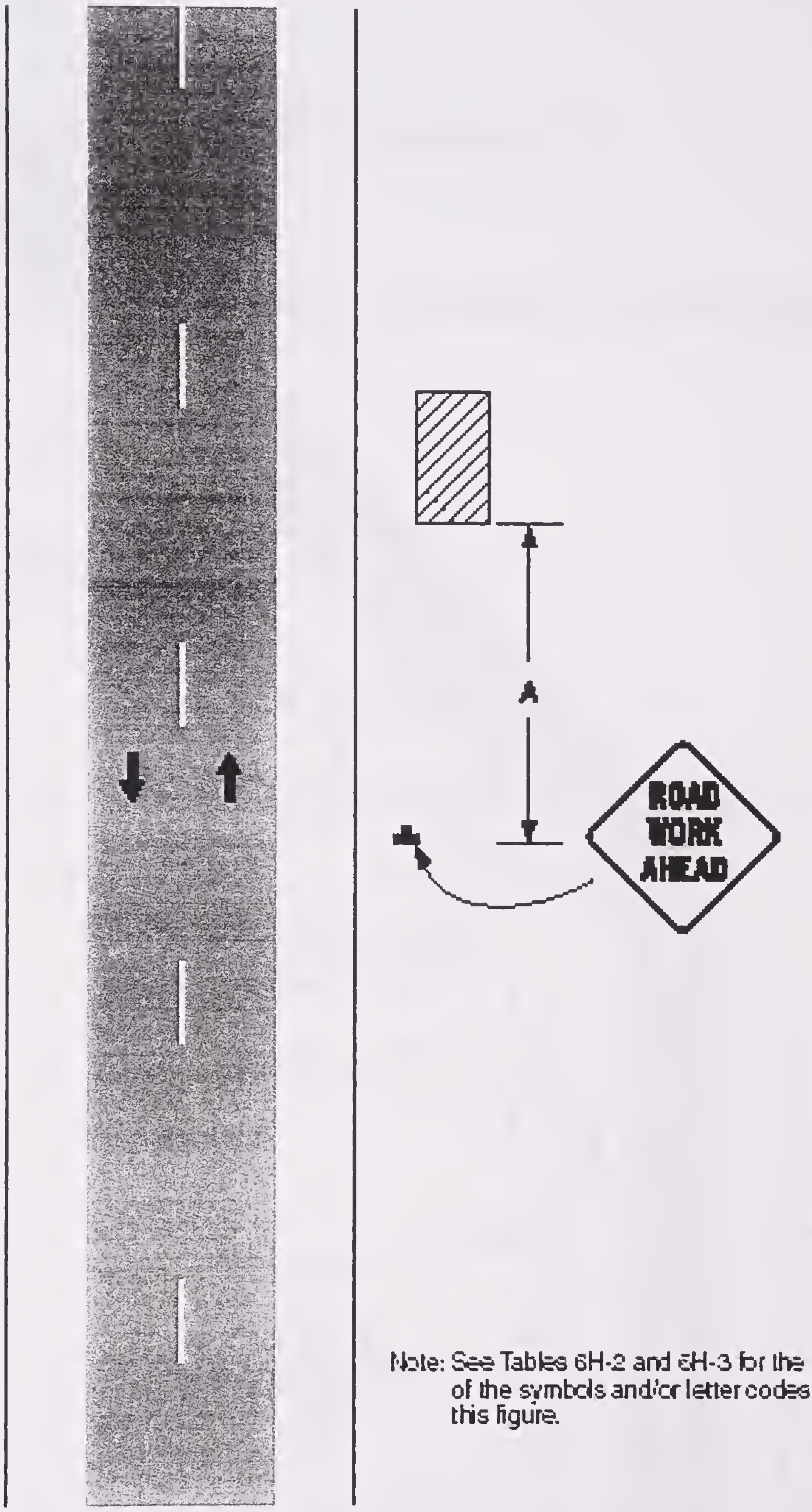
Figure 6H-3. Work on Shoulders (TA-3)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 3

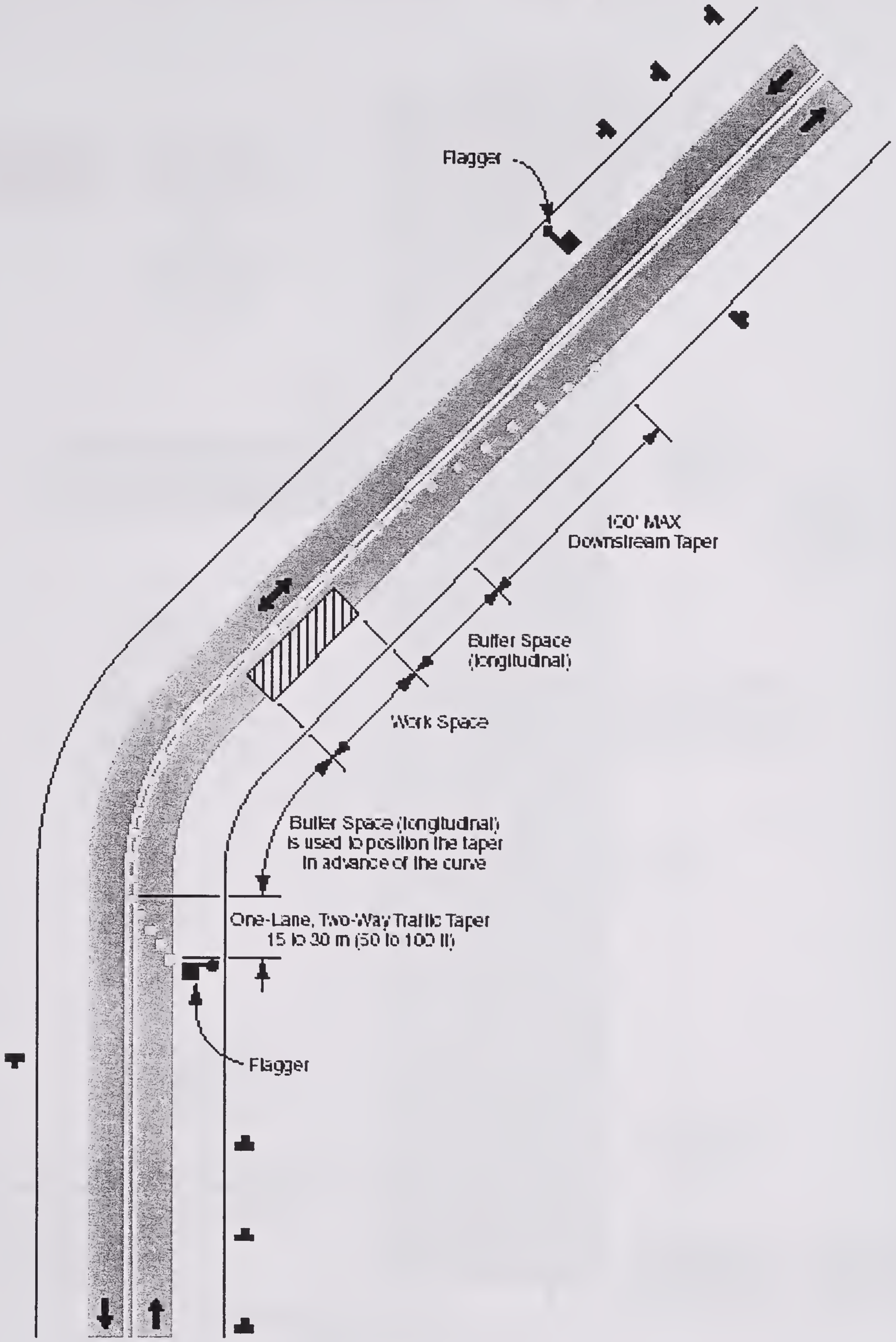
Figure 6H-1. Work Beyond the Shoulder (TA-1)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 1

Figure 6C-3. *Example of a One-Lane, Two-Way Traffic Taper*


Flagger
100' MAX
Downstream Taper
Buffer Space
(longitudinal)
Work Space
Buffer Space (longitudinal)
is used to position the taper
in advance of the curve
One-Lane, Two-Way Traffic Taper
15 to 30 m (50 to 100 ft)
Flagger

TransCanada
In business to deliver

North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix H-2

Traffic Management Plan for Imperial County Roads

Prepared by

WILLBROS

2087 E. 71st St.
Tulsa, OK 74136

February 2006

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  3.2 TRAFFIC MANAGEMENT APPROACH 6

LIST OF EXHIBITS

Exhibit A	IID Lateral Pipeline Route General Vicinity Map
Exhibit B	IID Lateral Construction Plan Vicinity Map (sheets 1-6)

LIST OF ATTACHMENTS

Attachment A	Typical Traffic Control Measures

Appendix H-2

Traffic Management Plan for Imperial County Roads

1.0 INTRODUCTION

North Baja Pipeline, LLC (North Baja), will construct the North Baja Pipeline Expansion Project (Project), a new natural gas pipeline from the U.S.-Mexico border to the existing North Baja facilities and the El Paso Natural Gas System in Ehrenberg, Arizona. The Project includes four elements: the B-Line, which includes a metering station and interconnection facilities in Ehrenberg and in Blythe, California, as well as a 79.8-mile, 42- and 48-inch-diameter pipeline between Blythe and the Mexican border; the Blythe Energy Interconnect (BEI) Lateral, a 0.6-mile, 10-inch-diameter pipeline that connects the Blythe Meter Station to the existing supply pipeline for the Blythe Energy Facility I; the short (less than 0.1 mile) 36-inch-diameter SoCal Gas Interconnect; and the Imperial Irrigation District (IID) Lateral, a 45.7-mile, 16-inch-diameter pipeline between North Baja's mainline and the IID El Centro Generating Station. The Project will be constructed in phases, with the first phase planned for construction in 2007, the IID Lateral for 2008, and the final phase of the Project in 2009, pending completion of upstream liquefied natural gas (LNG) terminal facilities.

2.0 ROUTE DESCRIPTION – IID LATERAL PIPELINE

The 16-inch Imperial Irrigation District (IID) Lateral Pipeline extends from the Ogilby area of southeastern California, west of Yuma, Arizona, westward to El Centro, California. The IID Lateral will be installed 1 foot outside the roadway along the Evan Hewes Highway from MP 8.5 to MP 27.1 where it then enters the El Centro Valley. In the Valley, the lateral line will generally be installed in streets from MP 27.7 to the terminus of the line at MP 45.7. While the only residential area in the first 27 miles is located at MP 8.9, residences and some businesses are located sporadically as the pipeline passes through the Valley.

3.0 TRAFFIC MANAGEMENT APPROACH

North Baja will consult with the Imperial County Public Works. It is likely that Imperial County will require that construction measures comply with California Department of Transportation (CalTrans) Traffic Manual. North Baja's plan requires that the contractor comply with all relevant elements of the CalTrans Traffic Manual, Chapter 5, Traffic Controls. Key traffic control elements in the manual address:

- Temporary traffic control;
- Pedestrian, bicycle, and worker considerations;
- Hand signaling control;
- Types of traffic control devices; and
- Types of temporary traffic control zone activities.

Section 3.1 describes the construction considerations along the pipeline route. Section 3.2 addresses the traffic management approach. Attachment A shows typical traffic control measures contained in CalTrans Traffic Manual that will be implemented by the contractor.

North Baja will submit detailed construction drawings for approval by Imperial County Public Works Department as part of obtaining an Encroachment Permit.

3.1 IID LATERAL CONSTRUCTION CONSIDERATIONS

The following summarizes the construction considerations for the IID Lateral Line:

Location in Relation to Imperial County Roads and Streets – Construction adjacent to and in areas of Imperial County roads and streets will be accomplished using urban construction techniques. To minimize disruption to residences and facilitate construction across roadways, canals and drains, North Baja will locate the pipe 1 foot outside the edge of pavement along Evan Hewes Highway and in the edge of the pavement in the valley. North Baja proposes to confine the construction work area to the permanent easement now occupied by Imperial County roads and streets with additional extra work space located along the road at major crossings such as cross streets, railroads, canals, and ditches. Certain crossings such as the operating canals, state highways, interstate highways, and many of the county roads and streets will be installed by conventional boring. All other crossings are proposed to be open cut aside from the drains whose substantial depth allows for the pipeline to be installed across the top.

Preconstruction Planning - Before construction in Imperial County, North Baja will obtain an encroachment permit from the Imperial Public Works Department. Design and construction methods will conform to Imperial County requirements. Preconstruction activities will include preliminary examination of the work areas and identification of the exact location of subsurface utilities, either through visual inspection or by digging potholes at intervals along the pipeline trench. If potholing identifies a conflict between existing utilities and the pipeline centerline, then the pipeline or utility will be horizontally and/or vertically realigned to eliminate the conflict.

North Baja will contact each owner and/or tenant of the properties abutting the road to explain the construction process and identify any special conditions or concerns that need to be incorporated into the construction plans. In addition, these adjacent residents and businesses will be notified by hand-distributed flyers 2 weeks before construction.

Timing – To minimize the duration of inconvenience to residences, North Baja proposes to close off one half to one mile-long sections of road and reroute traffic around these areas (while maintaining access for residents). No more than 2 miles of work area will be active at any one time and construction will advance along the road at an estimated 0.5 mile per day. Excluding any repaving which may be required, direct construction impacts at any given location are estimated to last no more than 2 to 3 weeks.

Construction Crews – The construction crew will be a self-sufficient spread and will have two major components. The first component being the personnel and equipment associated with the installation of the major crossings and the second component will be responsible for the installation of the pipeline sections in between the crossings. Both components of this pipeline spread will make every effort to keep unavoidable road closures or restricted access to a minimum and coordinate those closures with the impacted residences and businesses.

Safety Considerations and Access – Although Imperial County roadways are not a heavily traveled roadway, there are 34 residences and 5 businesses along the proposed route. North Baja will apply specific traffic management measures in cooperation with the Imperial County Department of Public Works. These include:

- The pipeline will be installed with a minimum of 36 inches of cover and with a minimum of 12 inches of separation from other utilities or obstructions. Clearance over and under drains and canals will be as agreed with Imperial Irrigation District.
- Intersections will be bored or trenched and steel plated if construction doesn't occur on consecutive days.
- Adjacent residents and businesses will be notified by hand-distributed flyers 2 weeks before construction. The flyers will include the dates of construction, the work hours, traffic detours, and contact numbers for North Baja and the contractor. Emergency response agencies will also be notified of the work schedule.
- The Underground Service Alert will be notified at least 48 hours before beginning work.
- Flagging personnel will be provided to route traffic around construction equipment and obstructions.
- Work will be scheduled during daylight hours unless alternative schedules are authorized.

- Access will be maintained to all residences or businesses except during actual trenching operations. Steel plates will be available to maintain access to driveways during periods when the trench is open.
- Non-local traffic will be detoured around construction activities.
- One lane of restricted traffic movement will be maintained through the construction area as it progresses down roadways. This will allow residences and businesses reasonable access during the construction activities.
- Where unrestricted traffic is impractical, North Baja proposes that its contractor will maintain at least one direction, either east or west, for exit of local traffic and access for any emergency traffic that may occur.
- At non-work times the work area will be secured and patrolled to minimize safety hazards associated with open trenches, heavy equipment, and other construction operations.
- Open trenches will be covered or cordoned off during non-working hours. The length of open trench may vary with individual circumstances and interferences that may occur along the corridor.

Trenching and Boring – The trench depth for the portions of the pipeline between the bored crossings is expected to be 6 to 7 feet to accommodate the 16-inch pipe and maintain 36-inch of cover in accordance with USDOT Pipeline Safety Regulations. Trench depth will also be contingent on the type of soils and the quantity of ground water encountered. Spoil material from the trench will be stockpiled and spread on the work side of the right-of-way or hauled to an approved stockpile location. Because the pipeline installation is in the road corridor, no topsoil segregation is planned. Any pavement or rock materials removed during the installation of the pipeline will be hauled away to an approved landfill or other suitable location. Sheet piling and dewatering techniques such as well-pointing will be utilized, as needed, in order to ensure a safe and stable trench and bore entrance or exit holes. Pipeline trench borehole dewatering will be kept to a minimum, as is practical. North Baja will dewater to nearby canals and drains in accordance with Regional Water Quality Control Board water quality standards.

Pipe Installation – Pipe installation into the trench will be performed in sections as long as practical, with the pipe sections being welded up alongside the ditch. In tight work areas, the contractor may elect to "double joint" pipe lengths into 80 to 120-foot sections at an offsite location and transport the pipe joints to the area. In addition, longer sections may be welded up at staging areas located nearby for use in very narrow workspace zones.

As the pipe installation progresses, tie-ins will be performed in the ditch at convenient locations to facilitate welding. Most tie-ins will occur on either side of crossings and at sites where installation methodology changes from one approach to another, *i.e.*, stovepipe to traditional pipe-lay. At these locations the ditch will be widened sufficiently to allow welders access and afford them the space necessary to complete the welds.

Backfilling and Testing – Following pipe installation and the coating of the welds, the ditch will be backfilled with the spoil material removed that meets North Baja's pipeline padding specifications, and compacted to the requirements of the Imperial County Public Works Department. New pavement will be installed where existing pavement is removed for ditching, and the area will be opened back to normal traffic. However, during hydrostatic testing the area again will be limited to traffic of necessity as a safety precaution. North Baja proposes to test the pipeline during a time of least disruption to the local residences and businesses. A minimum 8-hour hydrostatic test period is required by North Baja.

Noise and Dust – Noise will be reduced by maintaining equipment in good operating condition, equipped with proper noise control accessories including mufflers and or sound attenuation enclosures. Noise will be monitored for equipment that may run for extended periods of time such as pumps, compressors, and generators. Work will be scheduled during daylight hours unless alternative schedules are authorized. Dust will be suppressed by the use of water trucks and regular spraying.

Restoration – Following a successful test, the entire area will be cleaned up and restored to its original condition. Residential areas disturbed during construction will have all fencing, lawns, and plant materials replaced to a standard equal to the preconstruction conditions. Pavement removed or damaged during construction will be replaced initially with temporary material, and later re-paved, during restoration, to the requirements of the Imperial County Public Works Department.

3.2 TRAFFIC MANAGEMENT APPROACH

To effectively outline the traffic management issues associated with the pipe installation in the Imperial County roads and streets, the plan has been broken into segments. The plan is subject to revision as the design of the pipeline is finalized and input is received from Imperial County and the pipeline contractor. The segments are as follows:

Segment 1 – MP 8.5 to MP 27.1

Segment 2 – MP 27.7 to MP 38.7

Segment 3 – MP 38.7 to MP 38.9

Segment 4 – MP 39.7 to MP 41.4

Segment 5 – MP 41.4 to MP 42.9

Segment 6 – MP 42.9 to MP 43.4

Segment 7 – MP 44.7 to MP 45.7

Segment 1 – MP 8.5 to MP 27.1 (Evan Hewes Highway)

For Segment 1, construction equipment and personnel will utilize the eastbound lane of Evan Hewes Highway for pipe installation 1 foot outside the edge of pavement, from MP 8.8 to MP 13.7 and from MP 26.0 to MP 27.1. For this portion of Segment 1, the westbound lane will serve as access for emergency vehicles and local residents only. From MP 16.0 to MP 26.0, the westbound lane will be utilized for pipe installation 1 foot outside the edge of pavement and the eastbound lane will serve as access for emergency vehicles and local residents only. One lane traffic control along Segment 1 will be accomplished by the use of adequate warning, delineation and channelization techniques. Such techniques include proper pavement marking and signs, or use of other traffic control devices that are effective under varying conditions of light and weather. These devices include but are not limited to cones, barricades, portable delineators, flexible post type channelizers, drums, and barricades. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers.

At approximately milepost 8.8, is the proposed open cut crossing of Evan Hewes Highway where the pipeline passes from the north side of Evan Hewes Highway to the south side. While the roadway is being open cut for the installation of the pipeline, a steel plate will be used to bridge the pipe ditch because there are no adjacent roads to divert traffic.

Near milepost 13.1, the pipeline will cross Brock Research Center Road which is essentially an exit from Interstate 8 with an overpass but no roadway to the north. Because of its proximity to the interstate, North Baja is proposing to bore Brock Research Center Road resulting in minimal impact to traffic. The boring of this road negates the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. The estimated duration of the bored crossing is two days, one day for bore pit excavation and one day for pipe installation. Should these days not be consecutive adequate traffic control devices will be provided around the bore pits to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Evan Hewes Highway.

Near MP 13.7 is the open cut crossing of Evan Hewes Highway where the pipeline crosses back to the north side of the highway. While the roadway is being open cut for the installation of the pipeline, a steel plate will be used to bridge the pipe ditch as there are no adjacent roads to divert traffic.

Near MP 26.0 is the open cut crossing of Evan Hewes Highway where the pipeline crosses back to the south side of the highway. While the roadway is being open cut for the installation of the pipeline, a steel plate will be used to bridge the pipe ditch because there are no adjacent roads to divert traffic.

These temporary traffic control zones will be carefully monitored under varying conditions of traffic volume, light, and weather to ensure that traffic control measures are operating effectively and that all devices are clearly visible, clean and in good repair. However, it is expected that traffic will be sparse as construction is proposed for the summer months when there is significantly less traffic in the area.

Segment 2 – MP 27.7 to MP 38.7 (Hunt Road)

For Segment 2, the westbound lane of Hunt Road will be used for pipe installation from MP 27.6 to M.P 33.9, MP 34.5 to MP 34.9, and from MP 35.9 to MP 38.7. For these three portions of Segment 2, the eastbound lane will serve as access for emergency vehicles and local residents only. From MP 34.9 to MP 35.9, the eastbound lane of Hunt Road will be used for pipe installation and the westbound lane will serve as access for emergency vehicles and local residents only. One- lane traffic control along Segment 2 will be accomplished by the use of adequate warning, delineation and channelization techniques. Such techniques include proper pavement marking and signs or use of other traffic control devices that are effective under varying conditions of light and weather. These devices include but are not limited to cones, barricades, portable delineators, flexible post type channelizers, drums and barricades. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers.

Near milepost 28.5, the pipeline will cross Vanderlinden Road, a proposed opencut crossing. While the roadway is being opencut, northbound traffic will be detoured 1 mile west on Chell Road to Miller Road and southbound traffic will be detoured 3 miles west on Interstate 8 to Bonds Corner Road. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Vanderlinden Road.

The next crossing in this segment is Miller Road located near milepost 29.5. Miller Road is also designated as County Highway S33 and is a proposed bored crossing resulting in minimal impact to traffic. The boring of this road negates the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. The estimated duration of the bored crossing is two days, one day for bore pit excavation and one day for pipe installation. Should these days not be consecutive adequate traffic control devices will be provided around the bore pits to permit safe traffic flow.

Near milepost 30.5, the pipeline will cross Enz Road, a proposed opencut crossing. While the roadway is being opencut, both north and southbound traffic will be detoured 1 mile east on Chell Road to Miller Road. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Enz Road.

The next crossing in this segment is Bonds Corner Road located near milepost 31.5. Bonds Corner Road is a proposed bored crossing resulting in minimal impact to traffic. The boring of this road negates the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. The estimated duration of the bored crossing is two days, one day for bore pit excavation and one day for pipe installation. Should these days not be consecutive adequate traffic control devices will be provided around the bore pits to permit safe traffic flow.

Near milepost 32.0, the pipeline will cross Schali Road, a proposed opencut crossing. The roadway north of the crossing dead-ends at the south right-of-way fence of Interstate 8 Highway and has no residences or businesses and is used primarily by farm equipment to access the adjoining fields; therefore, it will not be necessary to detour traffic. However, steel plating will be used to bridge the pipe ditch during the installation of this road crossing for emergency vehicles and farm equipment. While the roadway is being opencut, northbound traffic south of the road crossing will be diverted 1 mile east on Connelly Road to Bonds Corner Road. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Schali Road.

Near milepost 33.2, the pipeline will cross Towland Road, a proposed open cut crossing. While the roadway is being open cut, southbound traffic will be detoured 1 mile west on Edwards Road to Holtville Orchard Road while northbound traffic will be diverted 1 mile west on E. McCabe Road to Holtville Orchard Road. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Towland Road.

The next crossing in this segment is State Route 7 located near milepost 34.2. State Route 7 is also known as Holtville Orchard Road (formerly County Highway S32) and is a proposed bored crossing resulting in minimal impact to traffic. The boring of this road negates the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. The estimated duration of the bored crossing is two days, one day for bore pit excavation and one day for pipe installation. Should these days not be consecutive adequate traffic control devices will be provided around the bore pits to permit safe traffic flow.

Near milepost 34.9, the pipeline will cross Mets Road, a proposed opencut crossing. While the roadway is being opencut, southbound traffic will be detoured 1 mile east on Ross Road to Anderholt Road and northbound traffic will be diverted 1 mile west to Anderholt Road on Hilfiker Road. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Mets Road.

Near milepost 35.9, the pipeline will cross Anderholt Road, a proposed opencut crossing. While the roadway is being opencut, southbound traffic will be detoured 1 mile east on Ross Road to Mets Road and northbound traffic will be diverted 1 mile east to Mets Road on Hilfiker Road. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Anderholt Road.

Near milepost 36.9, the pipeline will cross Barbara Worth Road, a proposed opencut crossing. While the roadway is being opencut, southbound traffic will be detoured 1 mile east on Ross Road to Anderholt Road while northbound traffic will be diverted 1 mile east to Anderholt Road on Hilfiker Road. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Barbara Worth Road.

Near milepost 37.9, the pipeline will cross Meloland Road, a proposed opencut crossing. While the roadway is being opencut, southbound traffic will be detoured 1.5 miles west on E. Ross Road to Bowker Road while northbound traffic will be diverted 1 mile west to Bowker Road on McCabe Road. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Meloland Road.

These temporary traffic control zones will be carefully monitored under varying conditions of traffic volume, light and weather to ensure that traffic control measures are operating effectively and that all devices are clearly visible, clean and in good repair.

Segment 3 – MP 38.7 to MP 38.9 (McGrew Road and Interstate 8)

McGrew Road is a private road which is used primarily for farm equipment to access the adjoining fields. However, for Segment 3, construction equipment and personnel will utilize the northbound lane of McGrew Road for pipe installation. For all of Segment 3, the southbound lane will serve as access for emergency vehicles and farm equipment. One lane traffic control along Segment 3 will be accomplished by the use of adequate warning, delineation and channelization techniques. Such techniques include proper pavement marking, signs or use of other traffic control devices that are effective under varying conditions of light and weather. These devices include but are not limited to cones, barricades, portable delineators, flexible post type channelizers, drums and barricades. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers. Modification of these traffic control measures or working conditions may be required to expedite traffic movement and to promote worker safety.

At approximately milepost 39.1 is the proposed bored crossing of Interstate 8 resulting in minimal impact to traffic. The estimated duration of the bored crossing is four days, one day for bore pit excavation and three days for pipe installation.

Segment 4 – MP 39.7 to MP 41.4 (E. Ross Road)

For Segment 4, the eastbound lane of E. Ross Road will be used for pipe installation from MP 39.7 to MP 40.4 where the westbound lane will serve as access for emergency vehicles and local residents only. At MP 40.4 the pipeline crosses Bowker Road, while at the same location, E. Ross Road deviates slightly to the south. This facilitates the bored crossing of both roads with the same bore.

The Bowker Road/E. Ross Road combination crossing is a proposed bored crossing resulting in minimal impact to traffic. The boring of this road negates the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. The estimated duration of the bored crossing is two days, one day for bore pit excavation and one day for pipe installation. Should these days not be consecutive, adequate traffic control devices will be provided around the bore pits to permit safe traffic flow.

At MP 40.4, after the Bowker/E. Ross Roads crossing, the westbound lane of E. Ross Road will be used for pipe installation and the eastbound lane will serve as access for emergency vehicles and local residents only.

One- lane traffic control along Segment 4 will be accomplished by the use of adequate warning, delineation and channelization techniques. Such techniques include proper pavement marking and signs or use of other traffic control devices that are effective under varying conditions of light and weather. These devices include but are not limited to cones, barricades, portable delineators, flexible post type channelizers, drums and barricades. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers.

Segment 5 – MP 41.4 to MP 42.9 (Parker Road)

For Segment 5, construction equipment and personnel will utilize the northbound lane of Parker Road for pipe installation from MP 41.4 to MP 42.2. For this part of Segment 7, the southbound lane will serve as access for emergency vehicles and local residents only. After the pipeline crosses East Gillett Street, the pipe will be installed in the west edge of the southbound lane of Parker Road from MP 42.2 to MP 42.8 and will utilize the southbound lane of Parker Road for pipe installation. For this part of Segment 7 the northbound lane will serve as access for emergency vehicles and local residents only. One- lane traffic control along Segment 5 will be accomplished by the use of adequate warning, delineation and channelization techniques. Such techniques include, proper pavement marking, signs or use of other traffic control devices that are effective under varying conditions of light and weather. These devices include but are not limited to cones, barricades, portable delineators, flexible post type channelizers, drums and barricades. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers. Modification of these traffic control measures or working conditions may be required to expedite traffic movement and to promote worker safety.

Pertinent to this segment is the opencut crossing of East Hamilton Avenue at milepost 41.7. East Hamilton Avenue is a gravel road which dead-ends into State Route 111 and has no residences or businesses; therefore, it will not be necessary to detour traffic. However, steel plating will be used to bridge the pipe ditch during the installation of this road crossing. Further along this segment near milepost 42.2 is the opencut crossing of East Gillett, a gravel road, which also has no residences or businesses; therefore, it will not be necessary to detour traffic. Steel plating will be used to bridge the pipe ditch during the installation of this road crossing.

At the end of this segment, near milepost 42.9, is the proposed road bore of Evan Hewes Highway. This crossing technique results in minimal impact to traffic. The boring of this road negates the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. The estimated duration of the bored crossing is three days, one day for bore pit excavation and two days for pipe installation. Should these days not be consecutive adequate traffic control devices will be provided around the bore pits to permit safe traffic flow.

Segment 6 – MP 42.9 to MP 43.4 (Holton Road and State Route 111)

For Segment 6, the eastbound lane of Holton Road will be used for pipe installation. For all of Segment 6, the westbound lane will serve as access for emergency vehicles and local residents only. One- lane traffic control along Segment 6 will be accomplished by the use of adequate warning, delineation and channelization techniques. However, there is virtually no traffic on most of this segment of Holton Road as the road dead-ends into State Route 111 and a large vacant lot and an automobile junk yard constitute over 90 percent of the adjacent land use. Such techniques include proper pavement marking and signs or use of other traffic control devices that are effective under varying conditions of light and weather. These devices include but are not limited to cones, barricades, portable delineators, flexible post type channelizers, drums and barricades. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers.

At approximately MP 43.4 is the proposed bored crossing of State Route 111, resulting in minimal impact to traffic. The estimated duration of the bored crossing is four days, one day for bore pit excavation and three days for pipe installation.

Segment 7 – MP 44.7 to MP 45.7 (E. Villa Road)

For Segment 7, the eastbound lane of E. Villa Road will be used for pipe installation. For all of Segment 7, the westbound lane will serve as access for emergency vehicles and local residents only. One- lane traffic control along Segment 7 will be accomplished by the use of adequate warning, delineation and channelization techniques. Such techniques include proper pavement marking and signs or use of other traffic control devices that are effective under varying conditions of light and weather. These devices include but are not limited to cones, barricades, portable delineators, flexible post type channelizers, drums and barricades. The quantity and type of devices will be appropriate to assure the driver and pedestrian have positive guidance before approaching and while passing through the traffic control zone. Flagging personnel will be employed when all other methods of traffic control are inadequate to warn and direct drivers.

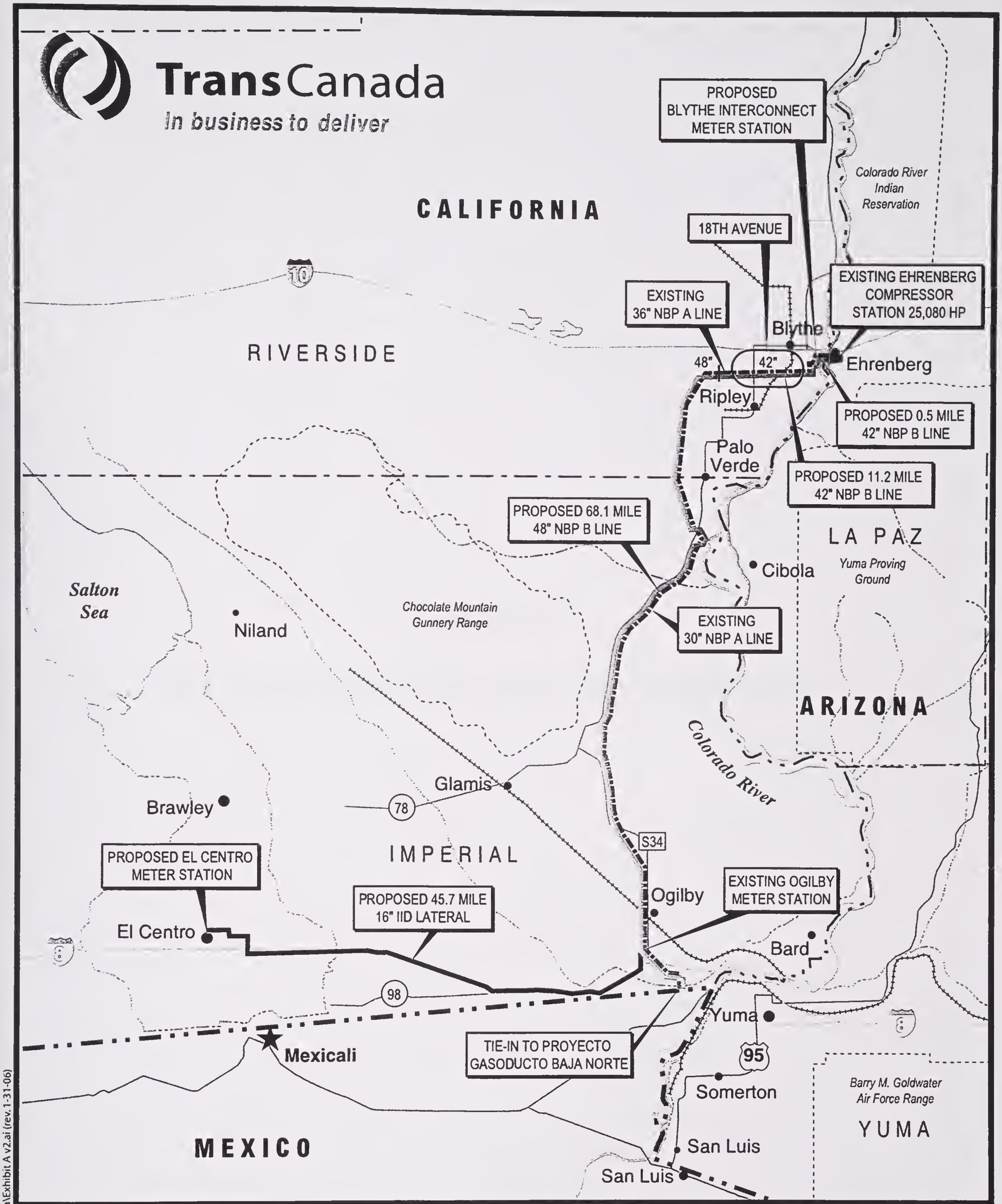
Near milepost 44.7 is the proposed opencut crossing of Cooley Road, a lightly traveled gravel road. While the roadway is being opencut, southbound traffic will be diverted 1 mile to the east on Cruickshank Road to old State Route 111 and northbound traffic will be diverted 1 mile east on Evan Hewes Highway to old State Route 111. The detour will be signed clearly over the entire length so that motorists can easily determine how to return to the original roadway. The estimated duration of the detour is two days, one day for pipe installation and one day for road restoration. Should these days not be consecutive, plating or other adequate materials will be provided over the pipeline trench to permit safe traffic flow. Access for local residents and emergency vehicles will be maintained at all times along Cooley Road.

The final road crossing for this lateral is located near milepost 45.6. The named road is Dogwood Road, designated as County Highway S31, and is a proposed bored crossing, which will result in minimal impact to traffic. The boring of this road negates the need to detour traffic but control devices, such as signage and barriers around the bore pits, will be implemented to maintain safe traffic flow. The estimated duration of the bored crossing is two days, one day for bore pit excavation and one day for pipe installation.

EXHIBITS

EXHIBIT A

IID LATERAL PIPELINE ROUTE GENERAL VICINITY MAP


TransCanada
In business to deliver
CALIFORNIA
PROPOSED BLYTHE INTERCONNECT METER STATION
Colorado River Indian Reservation
18TH AVENUE
10
EXISTING 36" NBP A LINE
EXISTING EHRENBERG COMPRESSOR STATION 25,080 HP
Blythe
RIVERSIDE
48"
42"
Ehrenberg
Ripley
PROPOSED 0.5 MILE 42" NBP B LINE
Palo Verde
PROPOSED 11.2 MILE 42" NBP B LINE
PROPOSED 68.1 MILE 48" NBP B LINE
LA PAZ
Cibola
Yuma Proving Ground
Salton Sea
Niland
Chocolate Mountain Gunnery Range
EXISTING 30" NBP A LINE
ARIZONA
Colorado River
Glamis
Brawley
78
S34
IMPERIAL
PROPOSED EL CENTRO METER STATION
PROPOSED 45.7 MILE 16" IID LATERAL
EXISTING OGILBY METER STATION
Ogilby
El Centro
8
Bard
98
Yuma
8
Mexicali
TIE-IN TO PROYECTO GASODUCTO BAJA NORTE
95
Somerton
Barry M. Goldwater Air Force Range
YUMA
MEXICO
San Luis
San Luis

LEGEND

-·-·-·- Existing NBP A Line

═══ Proposed NBP B Line

━━━ Proposed IID Lateral

IID LATERAL
PIPELINE ROUTE GENERAL VICINITY MAP

FEBRUARY 2006

EXHIBIT A

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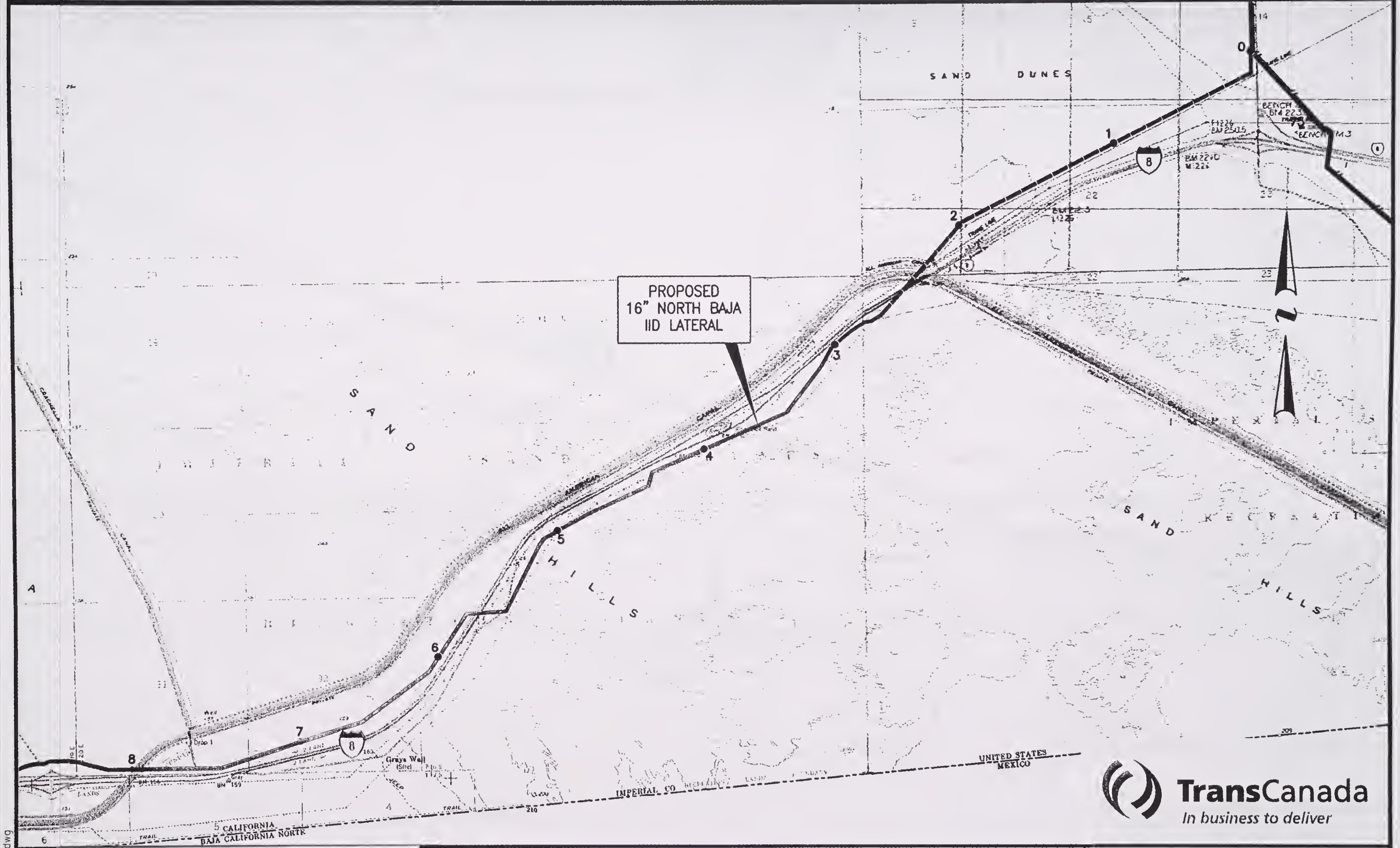
EXHIBIT B

IID LATERAL CONSTRUCTION PLAN VICINITY MAP



0 2000 4000 8000

GRAPHIC SCALE

IID LATERAL
TRAFFIC PLAN
LOCATION MAP
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES N/A	
SHEET 1 OF 6 SHEETS	
DRAWING NUMBER	REV
EXHIBIT IID-1	A

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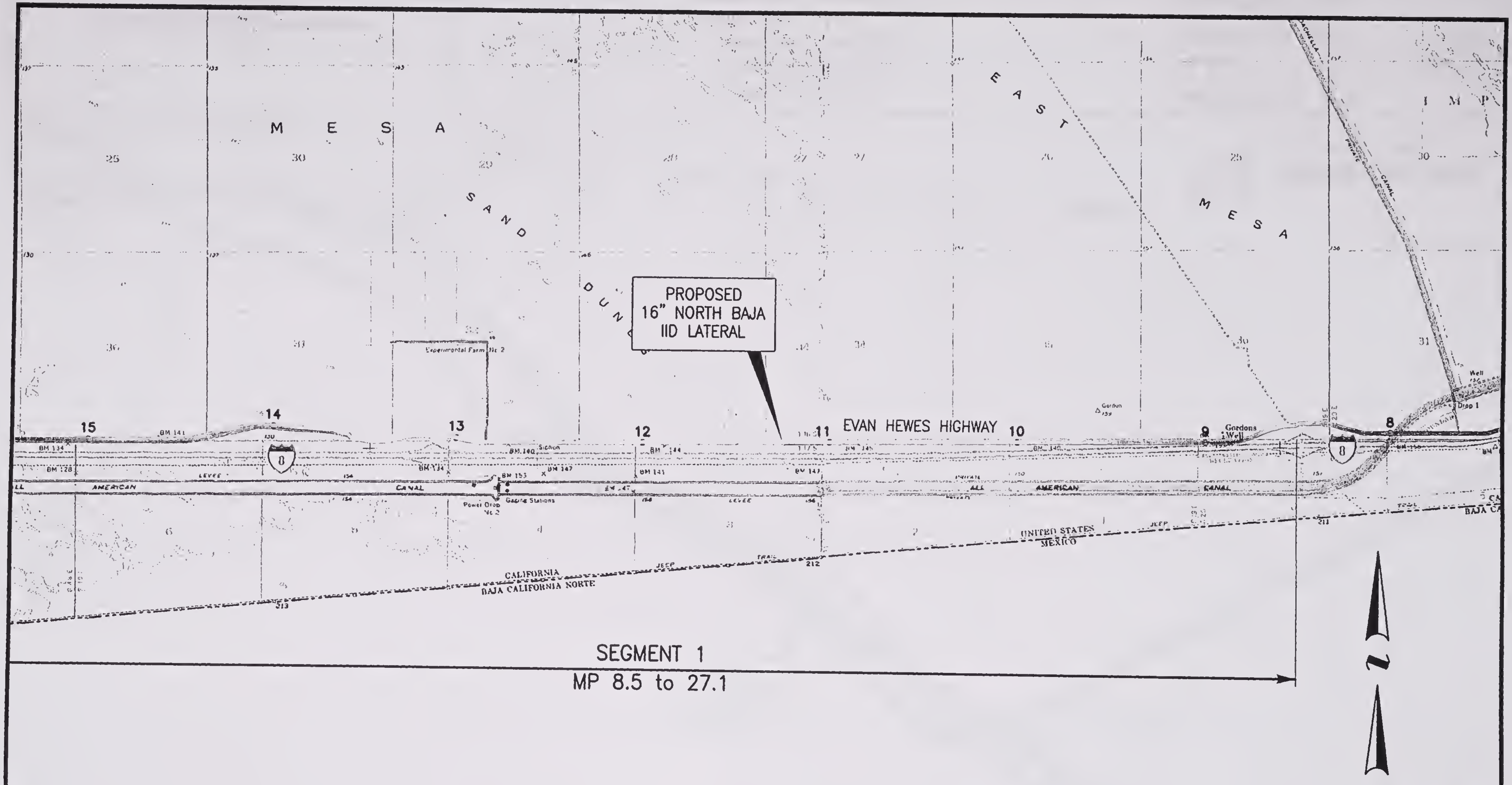

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GRAPHIC SCALE

IID LATERAL
TRAFFIC PLAN
LOCATION MAP
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

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SUPERSEDES	
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DRAWING NUMBER	REV
EXHIBIT IID-2	N/A

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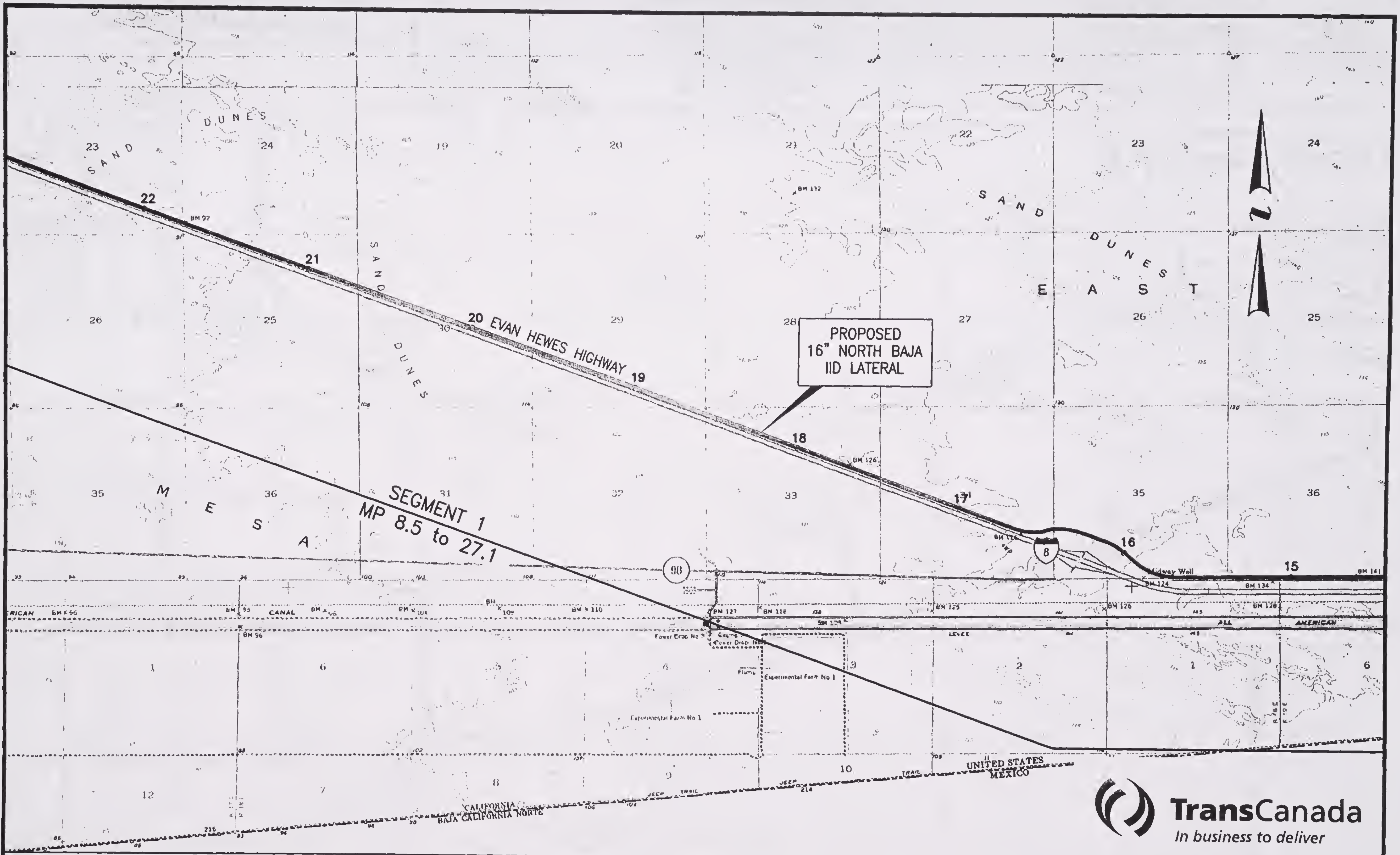

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LOCATION MAP
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

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Jan 25, 2006 - 8:29 PM

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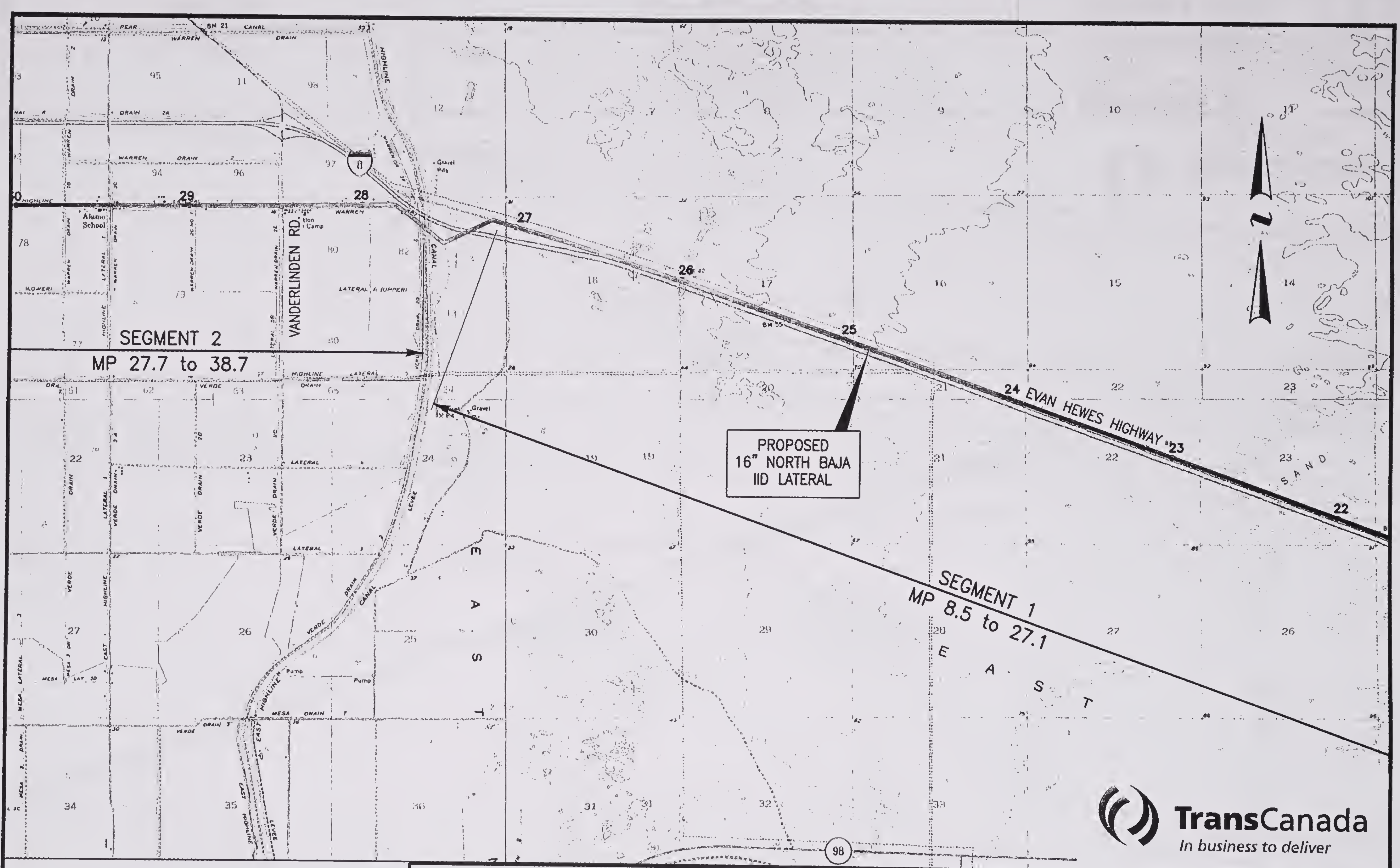

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IID LATERAL
TRAFFIC PLAN
LOCATION MAP
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	N/A			
SHEET	4	OF	6	SHEETS
DRAWING NUMBER				REV
EXHIBIT IID-4				A

pcduca : Exhibit_IID-4.dwg

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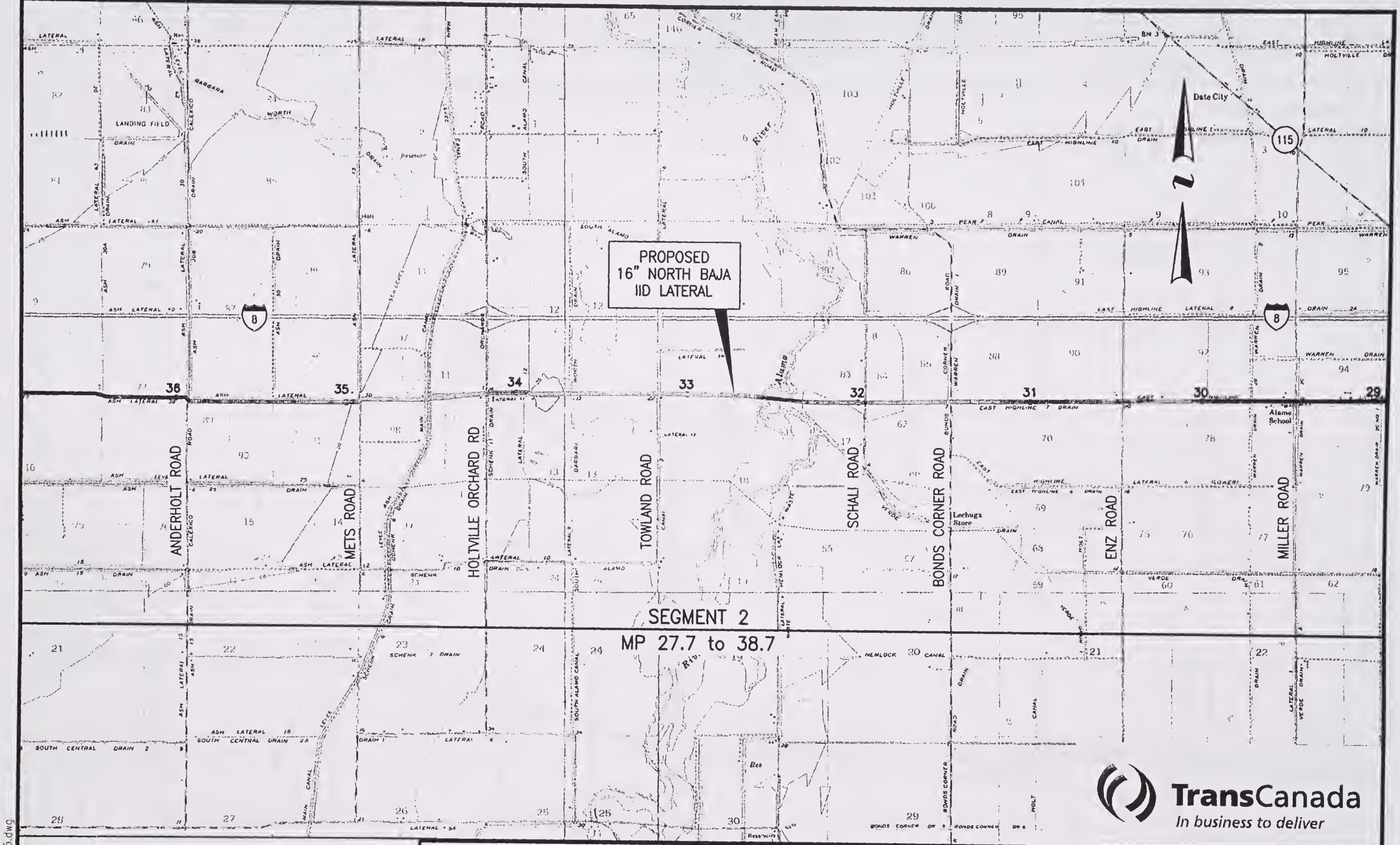

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GRAPHIC SCALE

IID LATERAL
TRAFFIC PLAN
LOCATION MAP
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES N/A	
SHEET 5 OF 6 SHEETS	
DRAWING NUMBER	REV
EXHIBIT IID-5	A

Jan 25, 2006 - 8:35 PM

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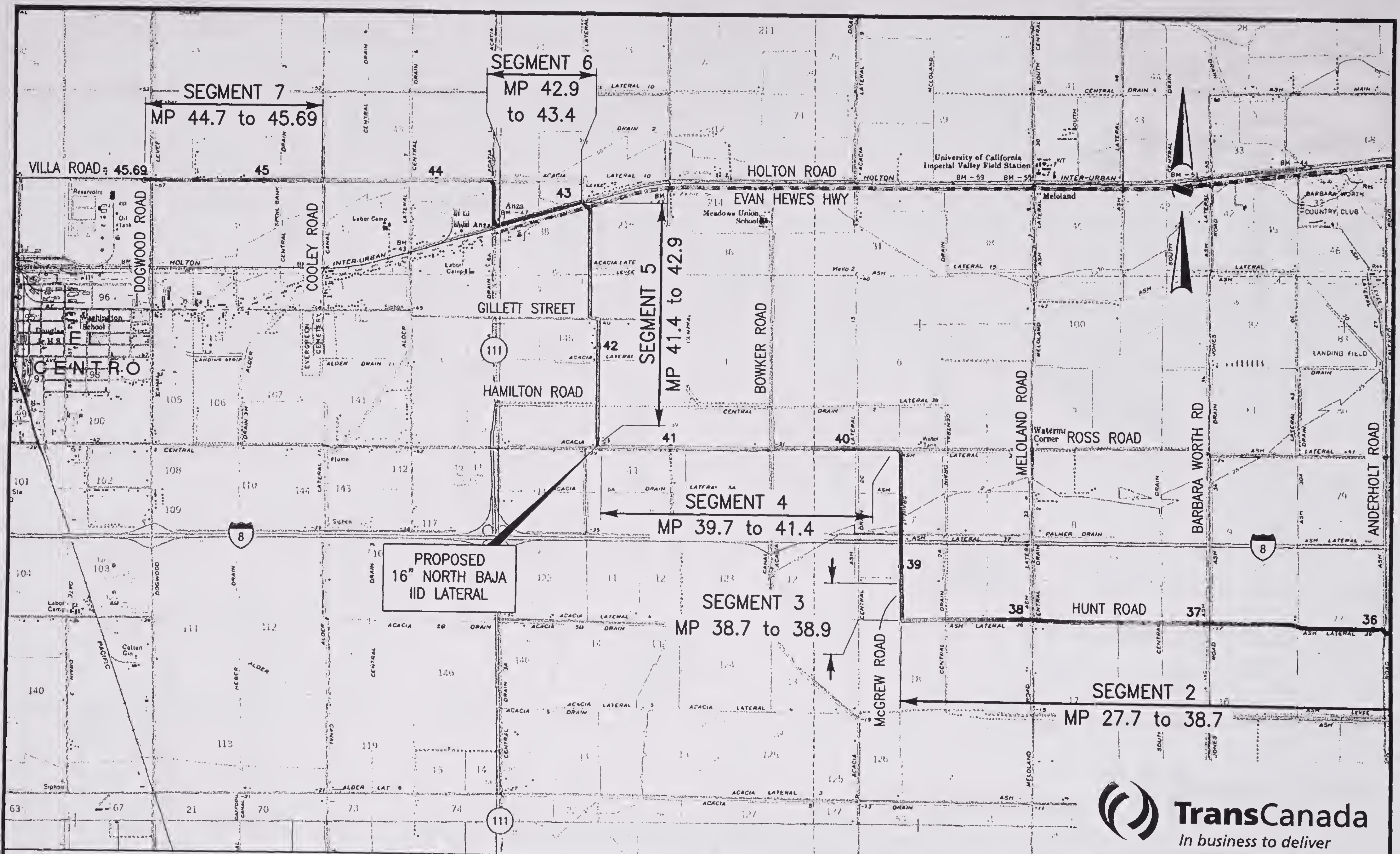

TransCanada
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0 2000 4000 8000
GRAPHIC SCALE

IID LATERAL
TRAFFIC PLAN
LOCATION MAP
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES N/A

SHEET 6 OF 6 SHEETS

DRAWING NUMBER EXHIBIT IID-6

REV A

pcduca : Exhibit_IID-6.dwg

ATTACHMENT A

TYPICAL TRAFFIC CONTROL MEASURES

Table 6C-1. Suggested Advance Warning Sign Spacing

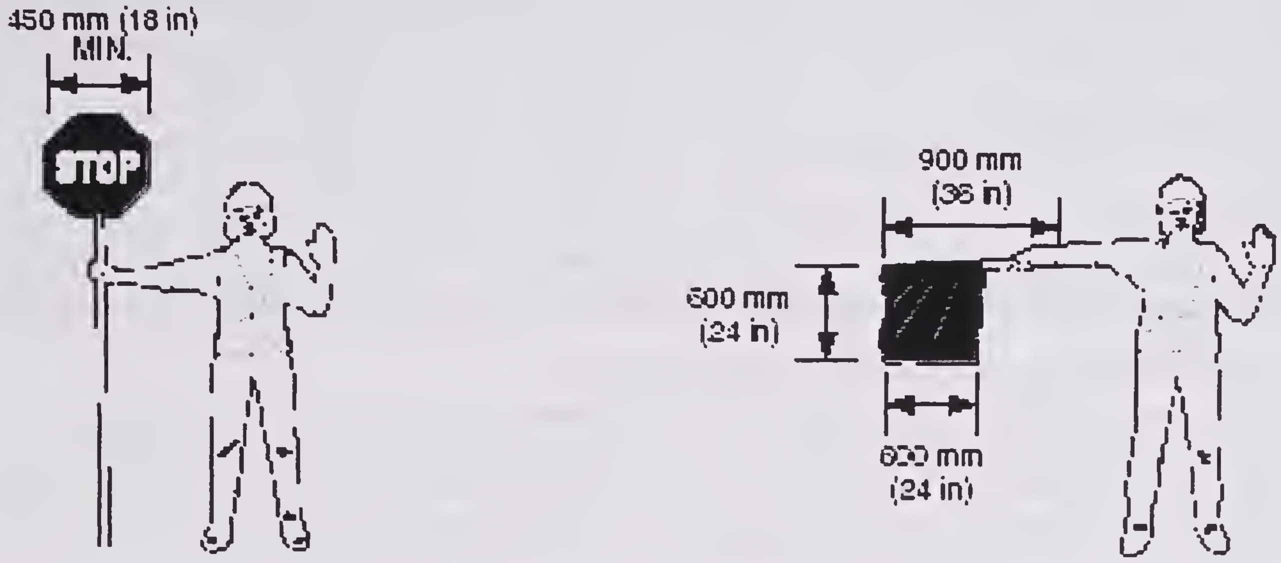
Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	30 (100)	30 (100)	30 (100)
Urban (high speed)*	100 (350)	100 (350)	100 (350)
Rural	150 (500)	150 (500)	150 (500)
Expressway / Freeway	300 (1,000)	450 (1,500)	800 (2,640)

* Speed category to be determined by highway agency

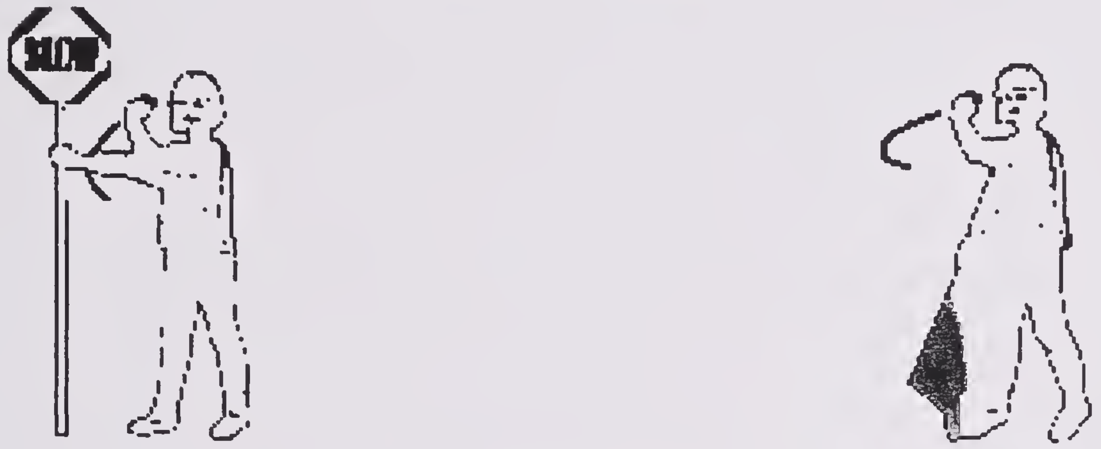
** Distances are shown in meters (feet). The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The third sign is the first one in a three-sign series encountered by a driver approaching a TTC zone.)

Figure 6E-1. Use of Hand-Signaling Devices by Flaggers

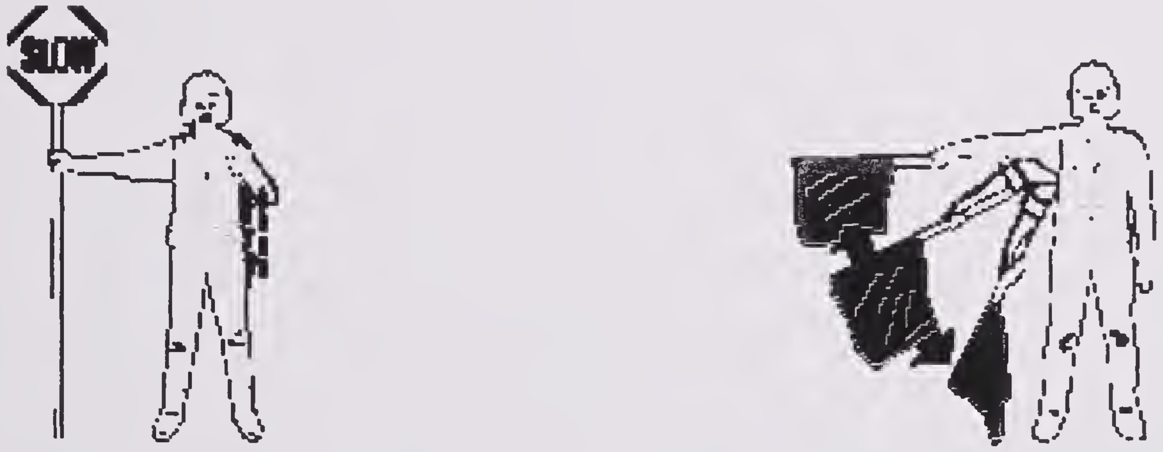
PREFERRED METHOD STOP/SLOW Paddle	EMERGENCY SITUATIONS ONLY Red Flag



TO STOP TRAFFIC

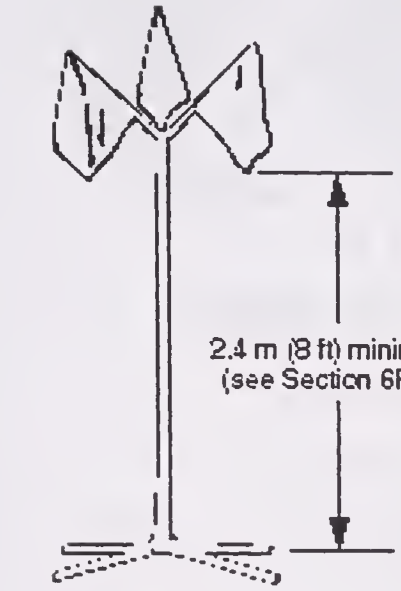


TO LET
TRAFFIC PROCEED

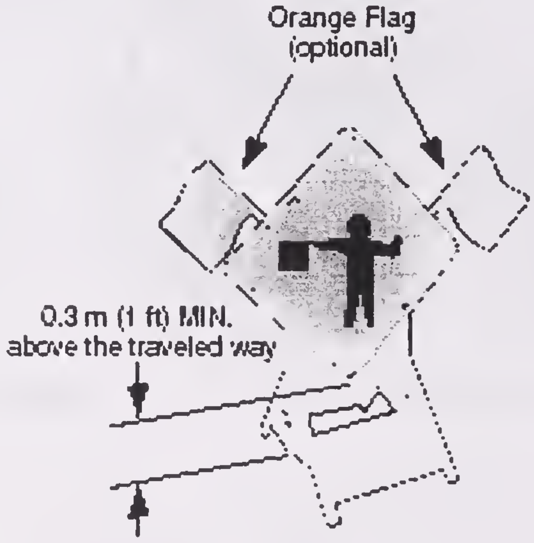


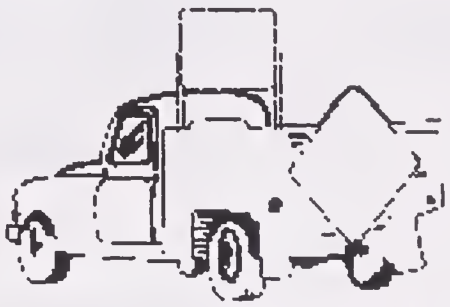
TO ALERT AND
SLOW TRAFFIC

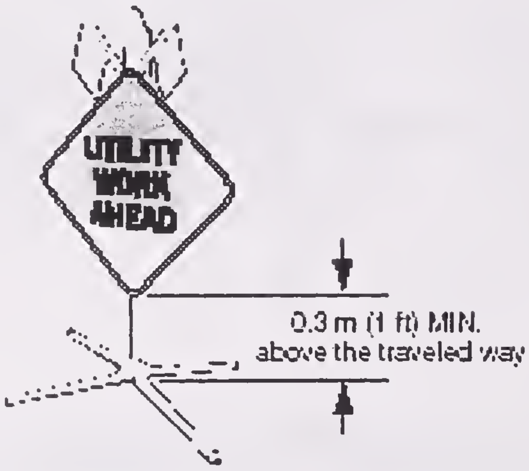
Figure 6F-2. Methods of Mounting Signs Other Than on Posts



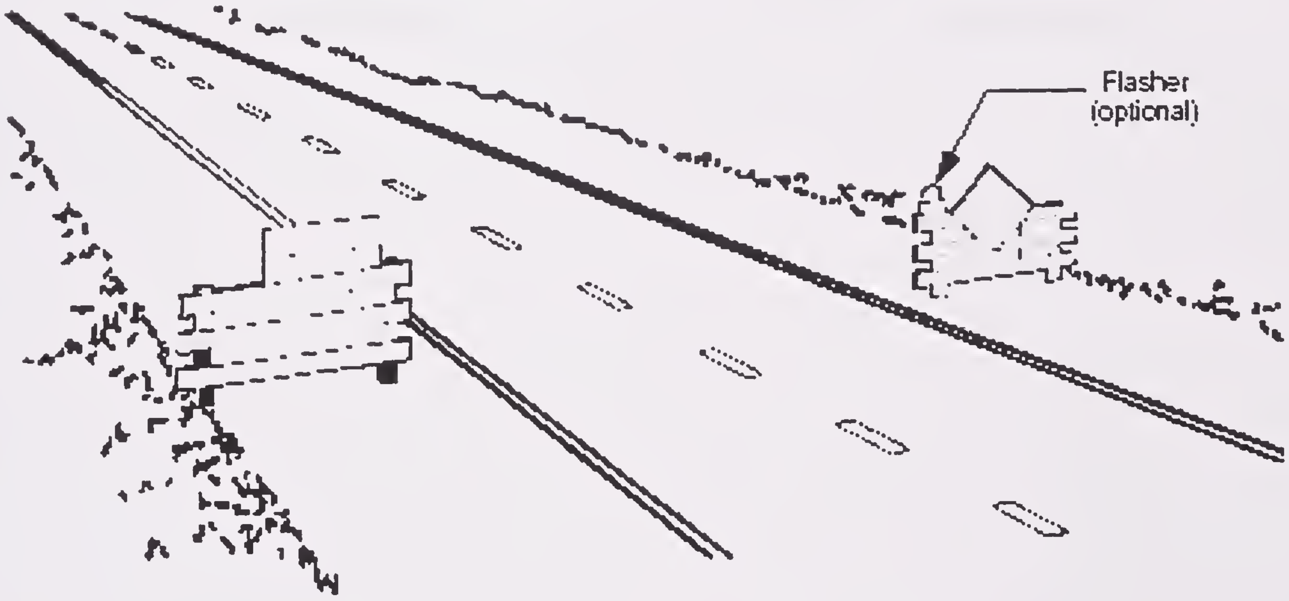
High-Level Warning Device
(Flag Tree)





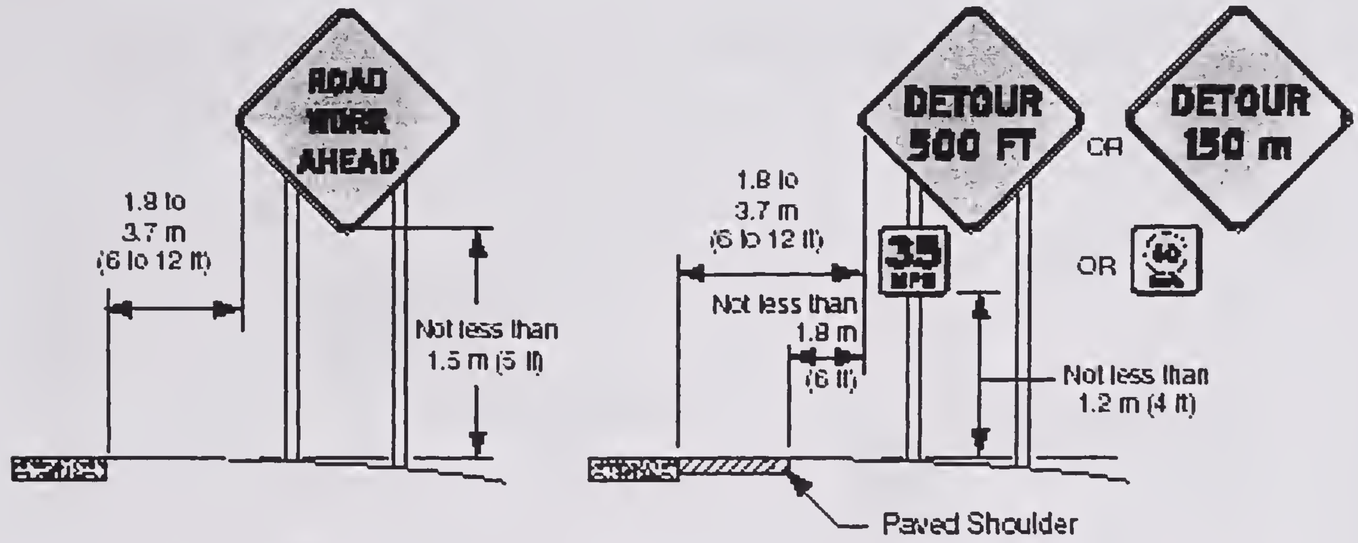


PORTABLE AND TEMPORARY MOUNTINGS



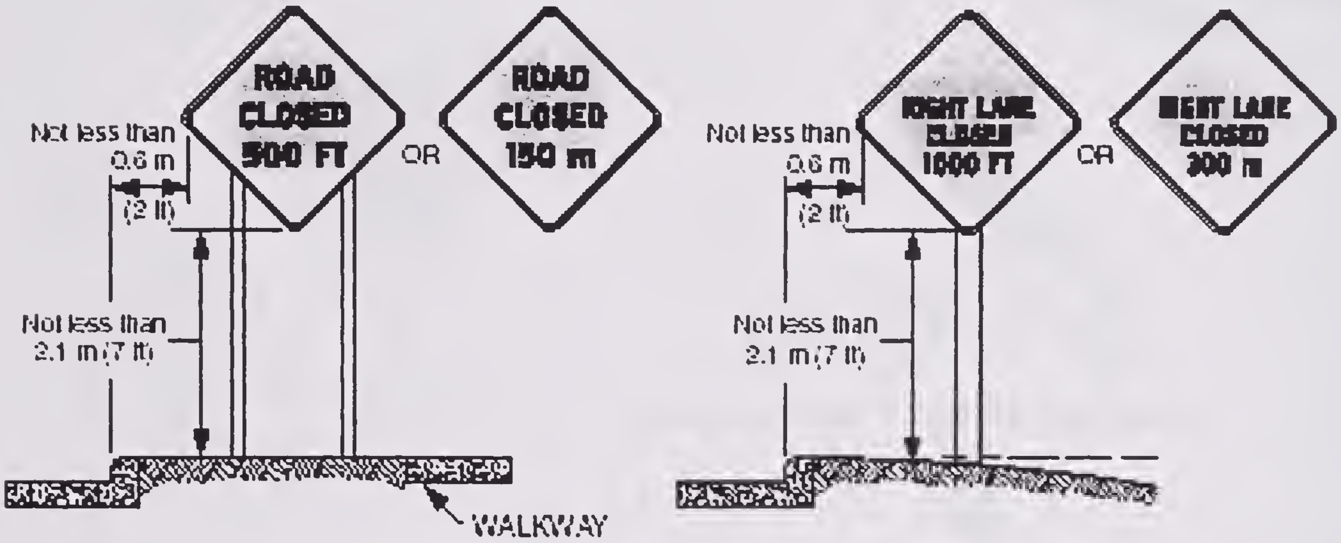
BARRICADES

Figure 6F-1. Height and Lateral Location of Signs—Typical Installations


ROAD WORK AHEAD
1.8 to 3.7 m (6 to 12 ft)
Not less than 1.5 m (5 ft)
DETOUR 500 FT
OR
DETOUR 150 m
1.8 to 3.7 m (6 to 12 ft)
35 MPH
OR
60
Not less than 1.8 m (6 ft)
Not less than 1.2 m (4 ft)
Paved Shoulder

RURAL DISTRICT

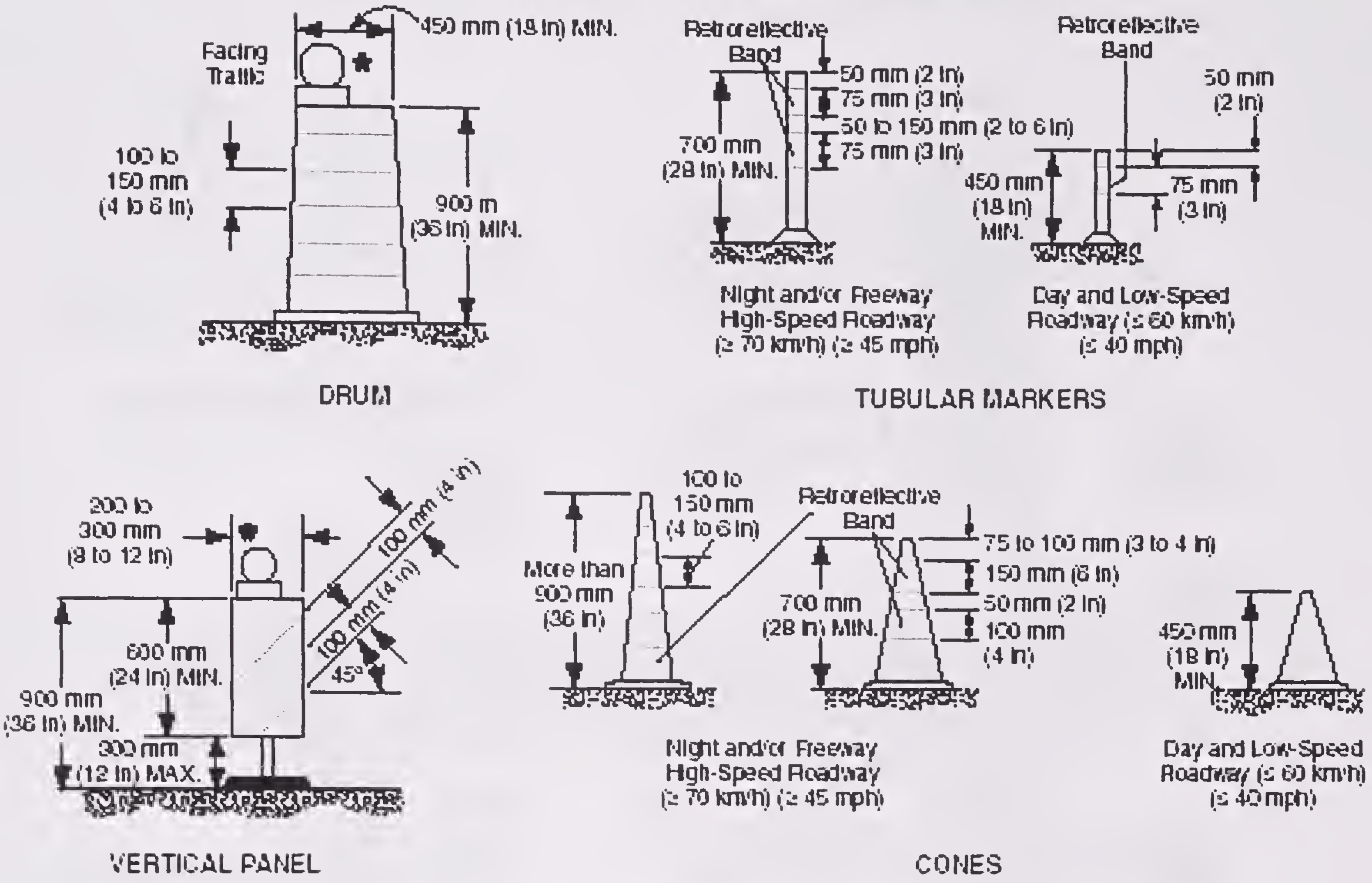
RURAL DISTRICT WITH ADVISORY SPEED PLATE


ROAD CLOSED 500 FT
OR
ROAD CLOSED 150 m
Not less than 0.6 m (2 ft)
Not less than 2.1 m (7 ft)
WALKWAY
RIGHT LANE CLOSED 1000 FT
OR
RIGHT LANE CLOSED 300 m
Not less than 0.6 m (2 ft)
Not less than 2.1 m (7 ft)

URBAN DISTRICT

URBAN DISTRICT

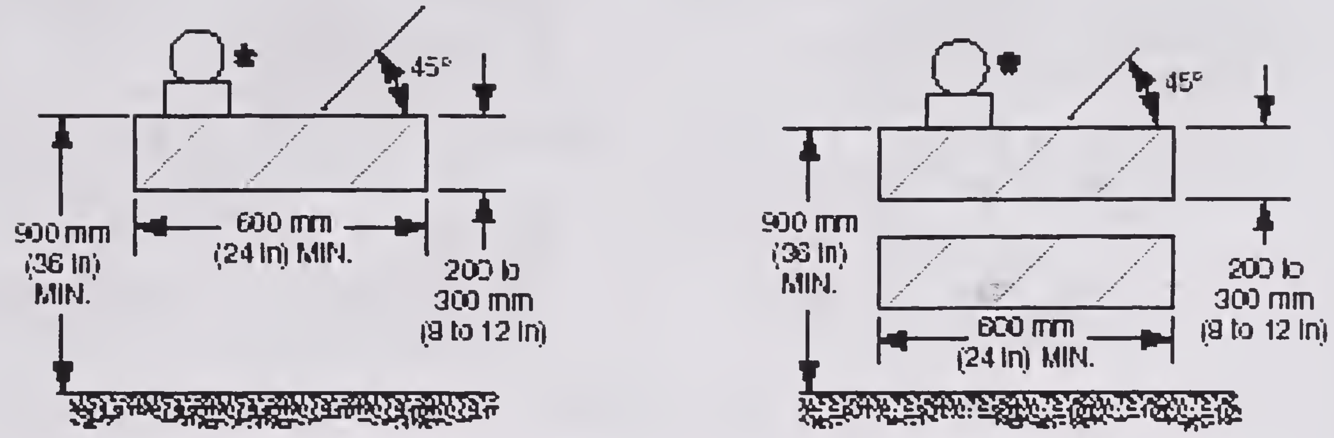
Figure 6F-7. Channelizing Devices (Sheet 1 of 2)



* Warning lights (optional)

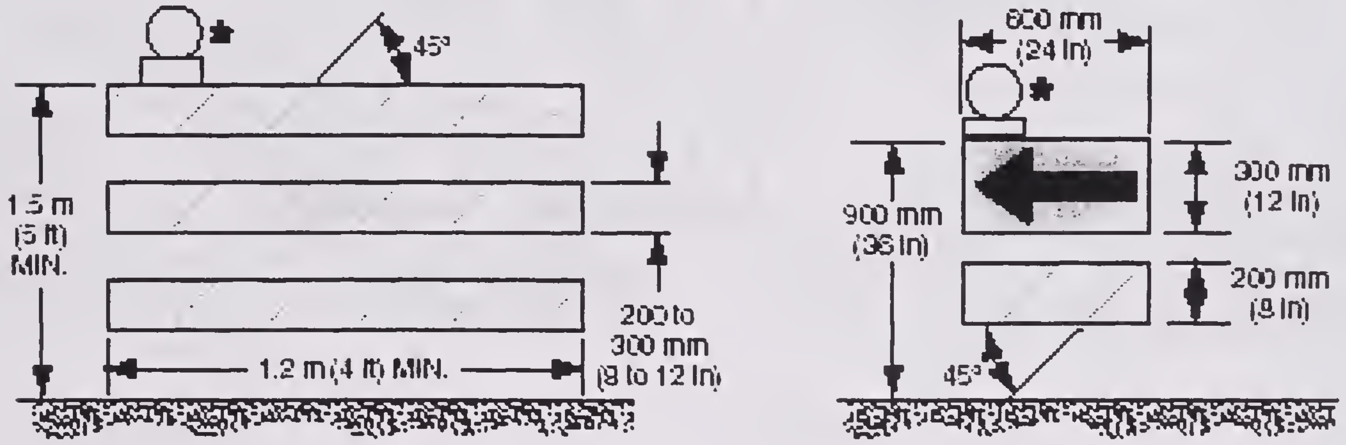
Note: If drums, cones, or tubular markers are used to channelize pedestrians, they shall be located such that there are no gaps between the bases of the devices, in order to create a continuous bottom, and the height of each individual drum, cone, or tubular marker shall be no less than 900 mm (36 in) to be detectable to users of long canes.

Figure 6F-7. Channelizing Devices (Sheet 2 of 2)



TYPE I BARRICADE **

TYPE II BARRICADE **



TYPE III BARRICADE **

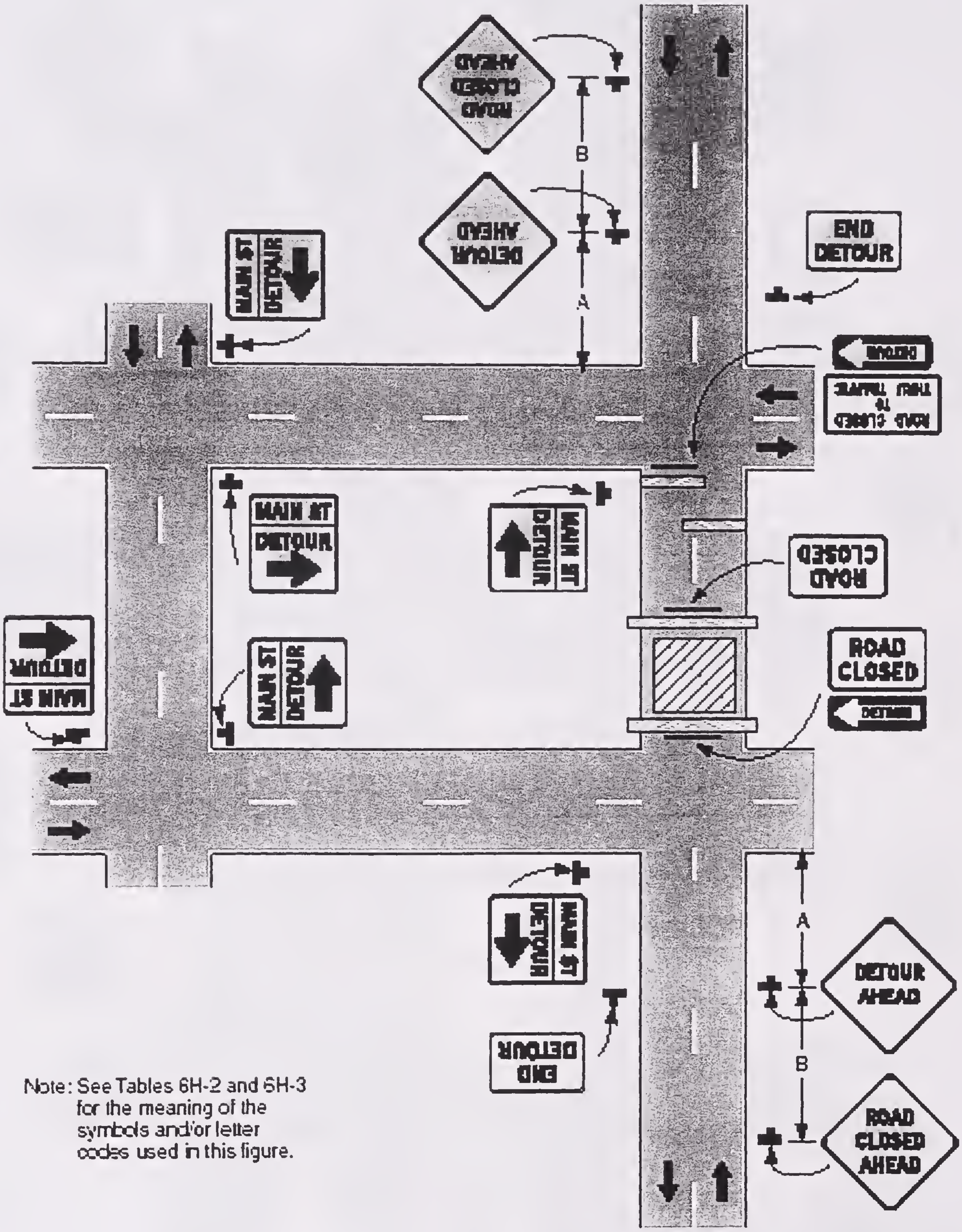
DIRECTION INDICATOR BARRICADE **

* Warning lights (optional)

** Rail stripe widths shall be 150 mm (6 in), except that 100 mm (4 in) wide stripes may be used if rail lengths are less than 900 mm (36 in). The sides of barricades facing traffic shall have retroreflective rail faces.

Note: If barricades are used to channelize pedestrians, there shall be continuous detectable bottom and top rails with no gaps between individual barricades to be detectable to users of long canes. The bottom of the bottom rail shall be no higher than 150 mm (6 in) above the ground surface. The top of the top rail shall be no lower than 900 mm (36 in) above the ground surface.

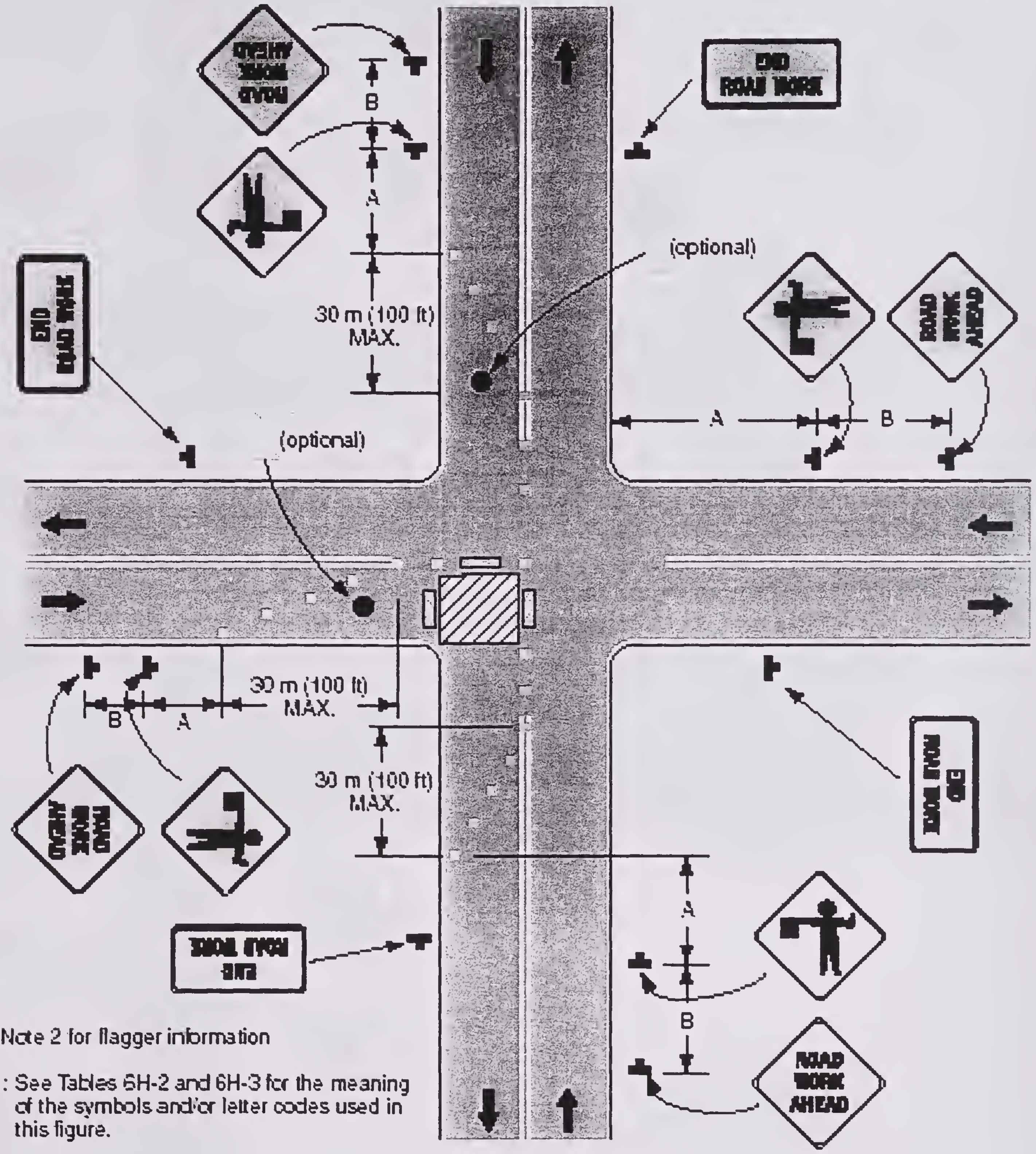
Figure 6H-20. Detour for Closed Street (TA-20)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 20

Figure 6H-27. Closure at Side of Intersection (TA-27)

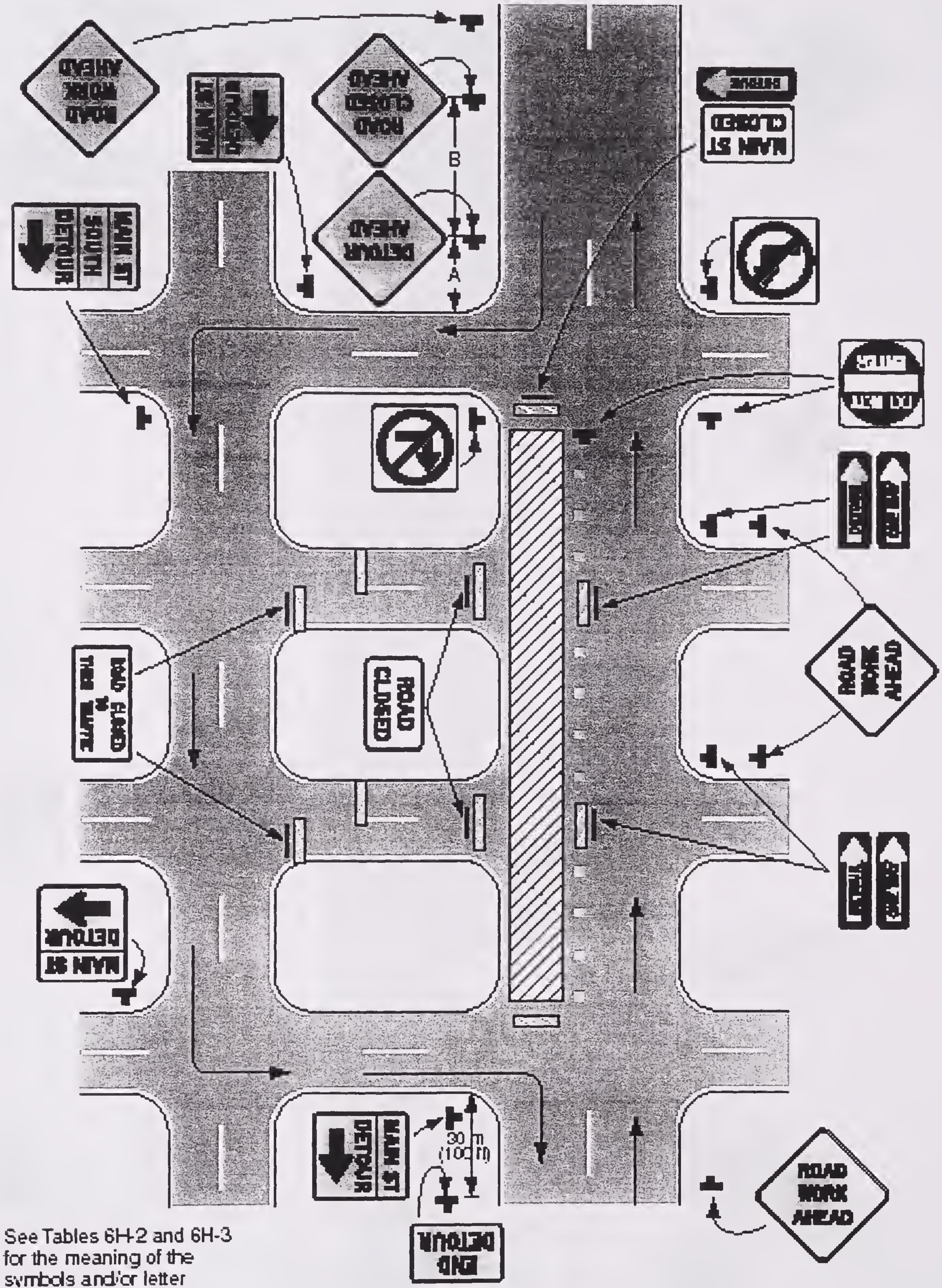


See Note 2 for flagger information

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 27

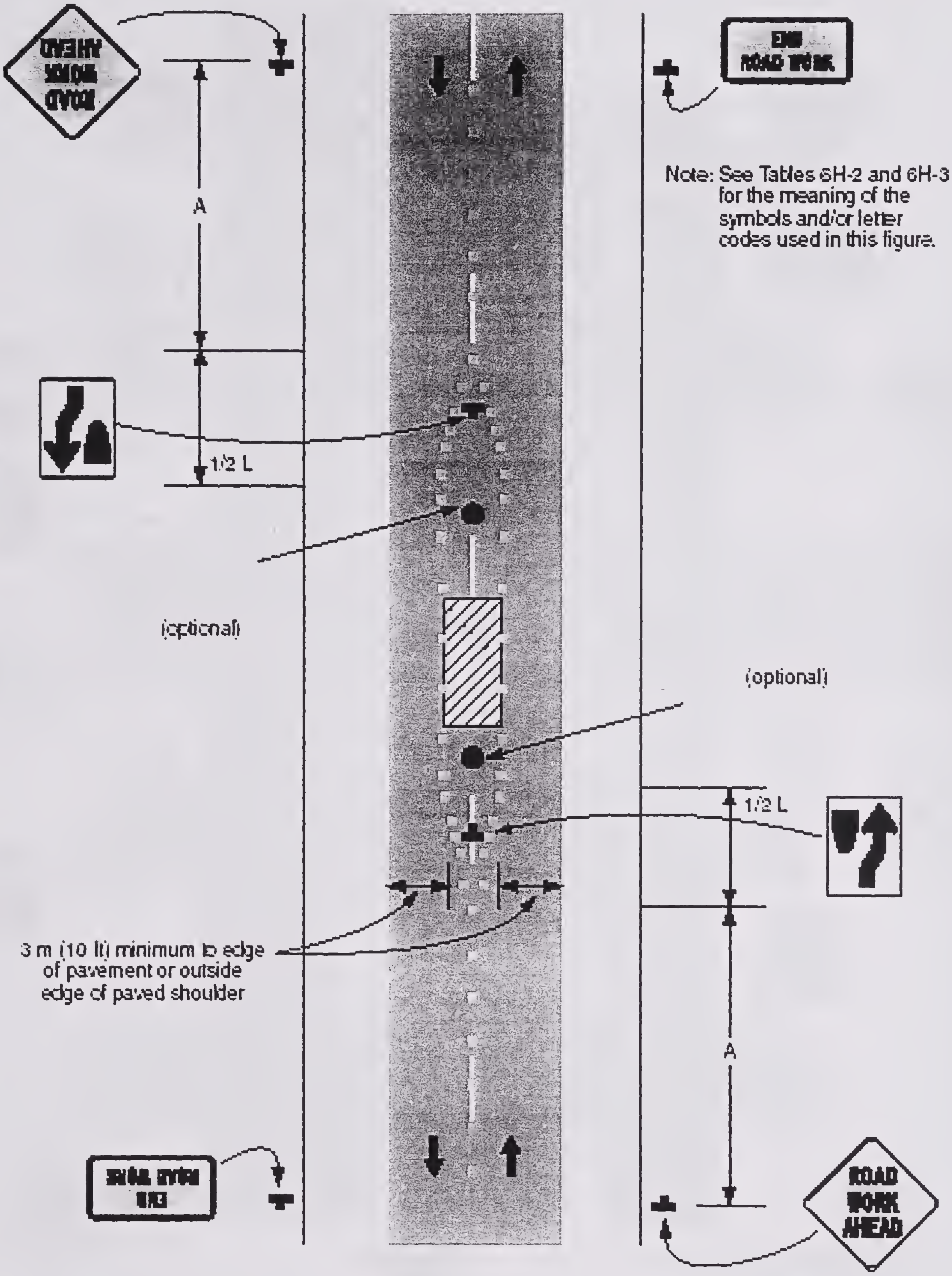
Figure 6H-19. Detour for One Travel Direction (TA-19)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 19

Figure 6H-15. Work in Center of Road with Low Traffic Volumes (TA-15)

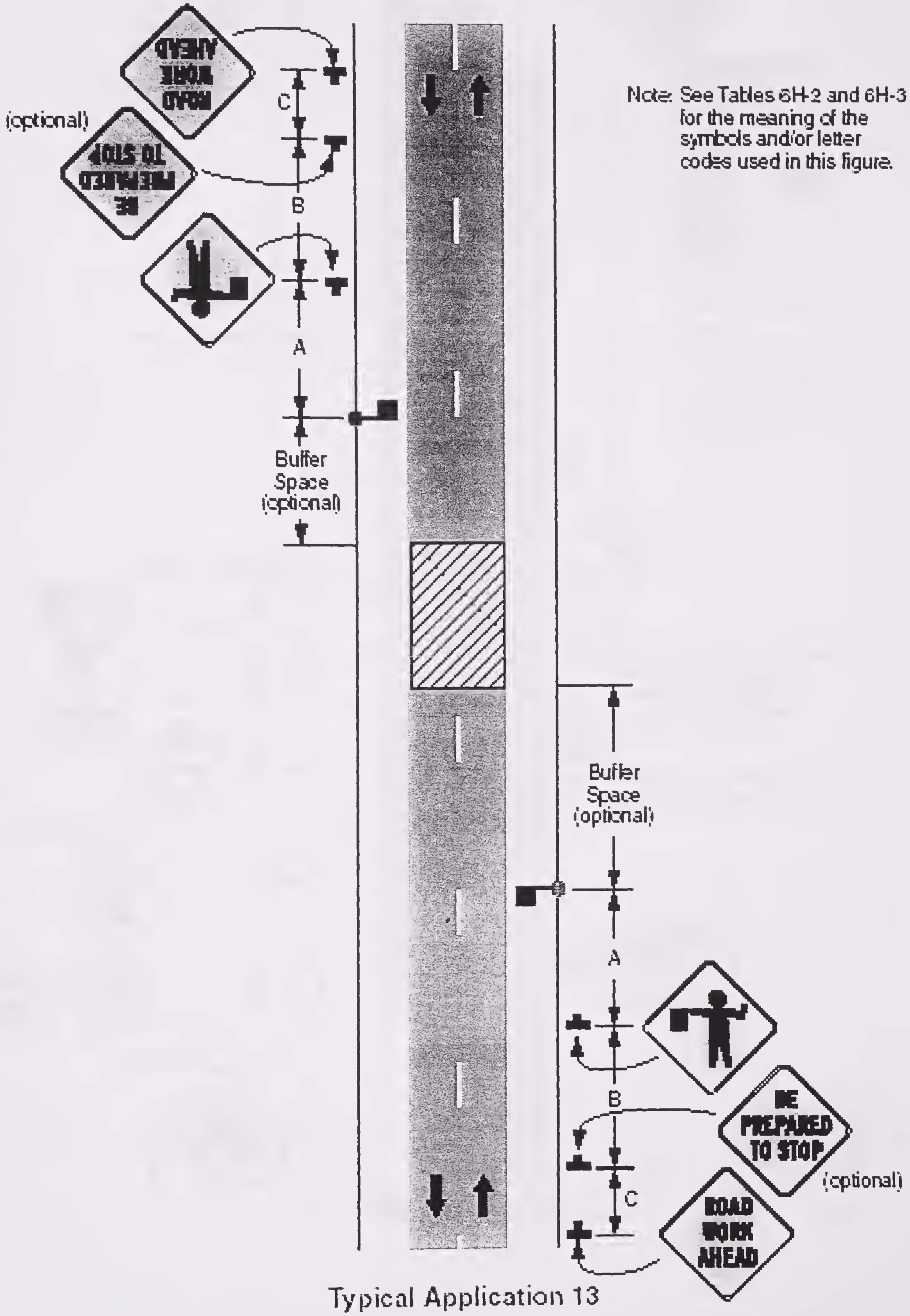


Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

3 m (10 ft) minimum to edge of pavement or outside edge of paved shoulder

Typical Application 15

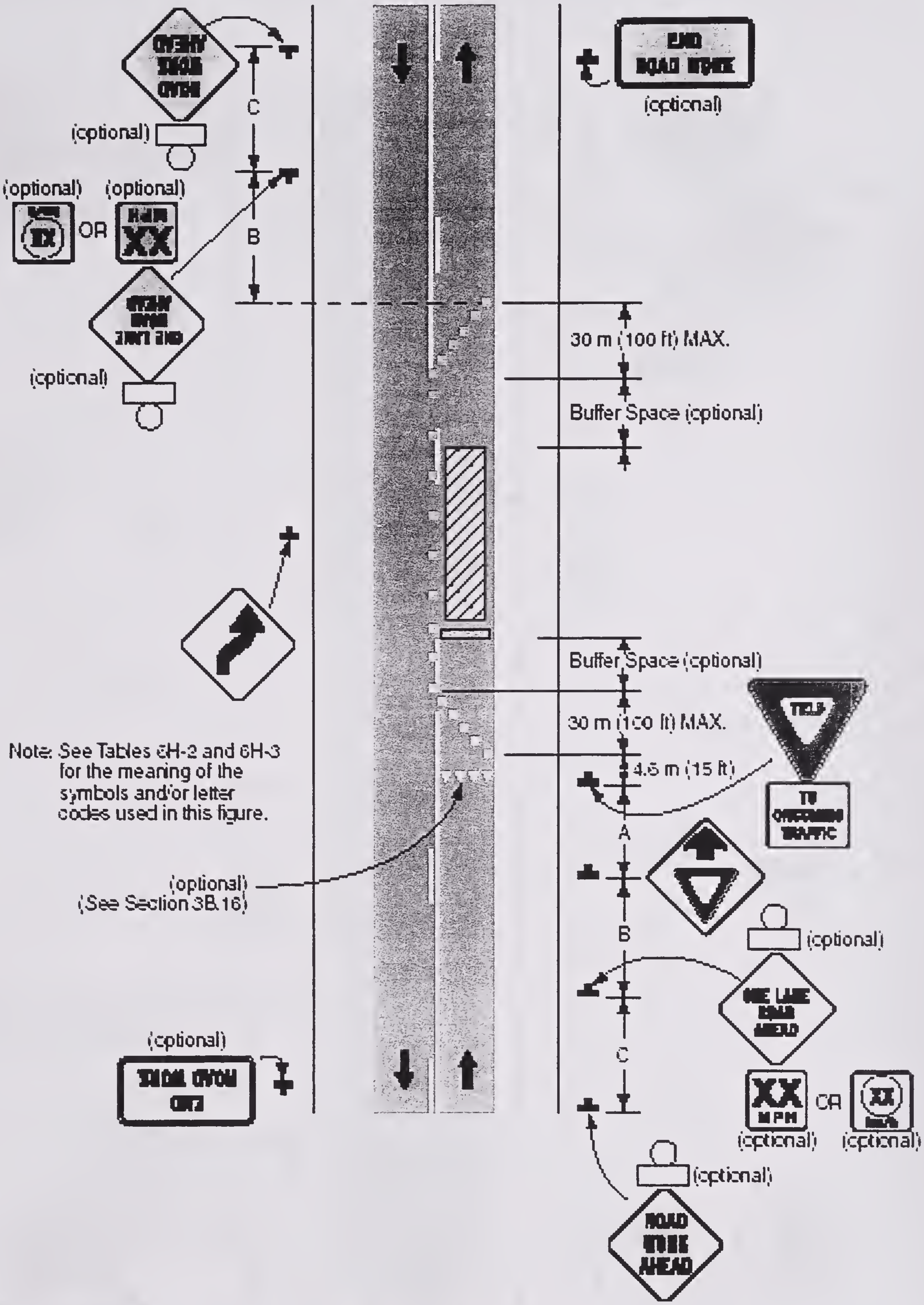
Figure 6H-13. Temporary Road Closure (TA-13)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 13

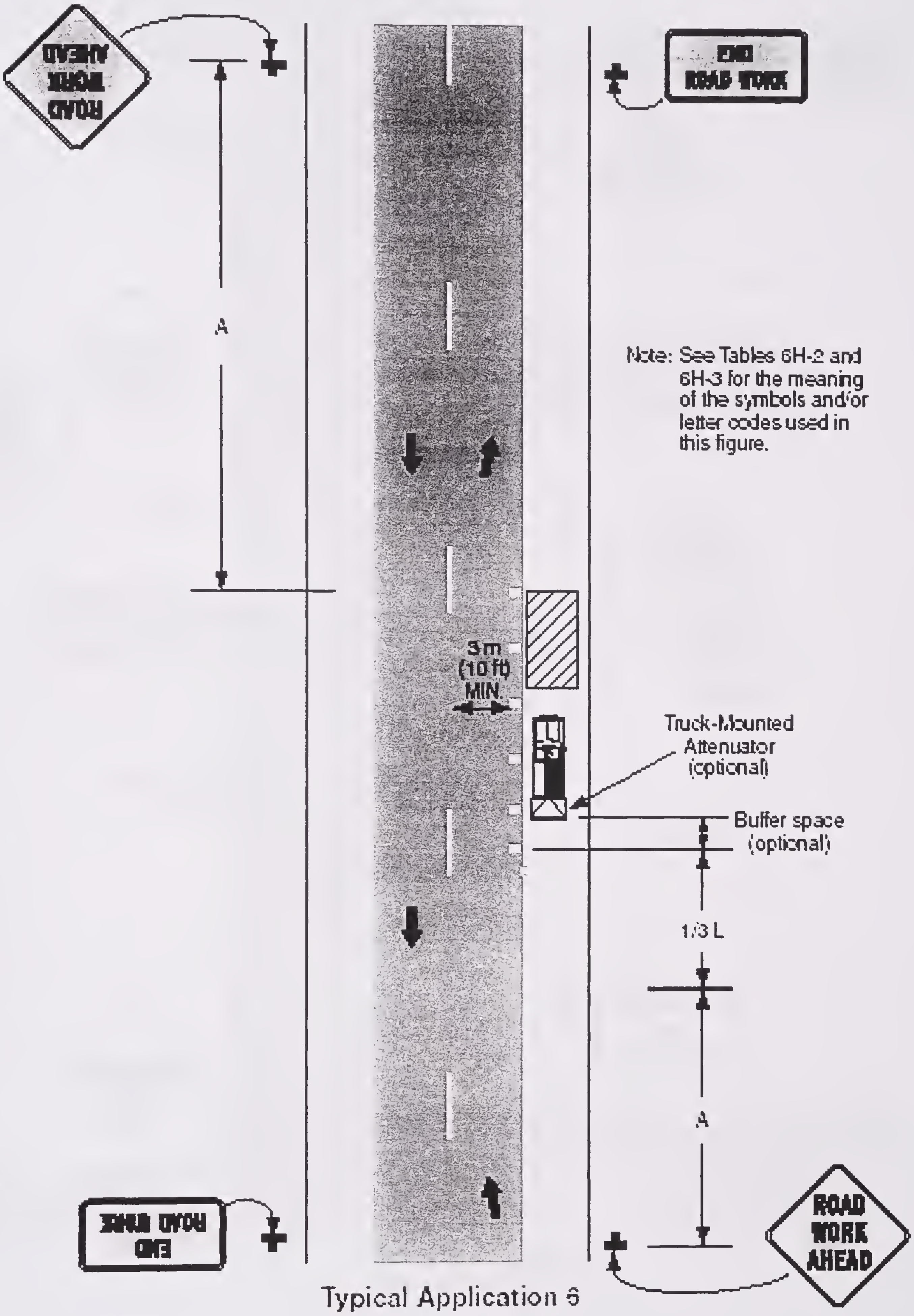
Figure 6H-11. Lane Closure on Two-Lane Road with Low Traffic Volumes



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 11

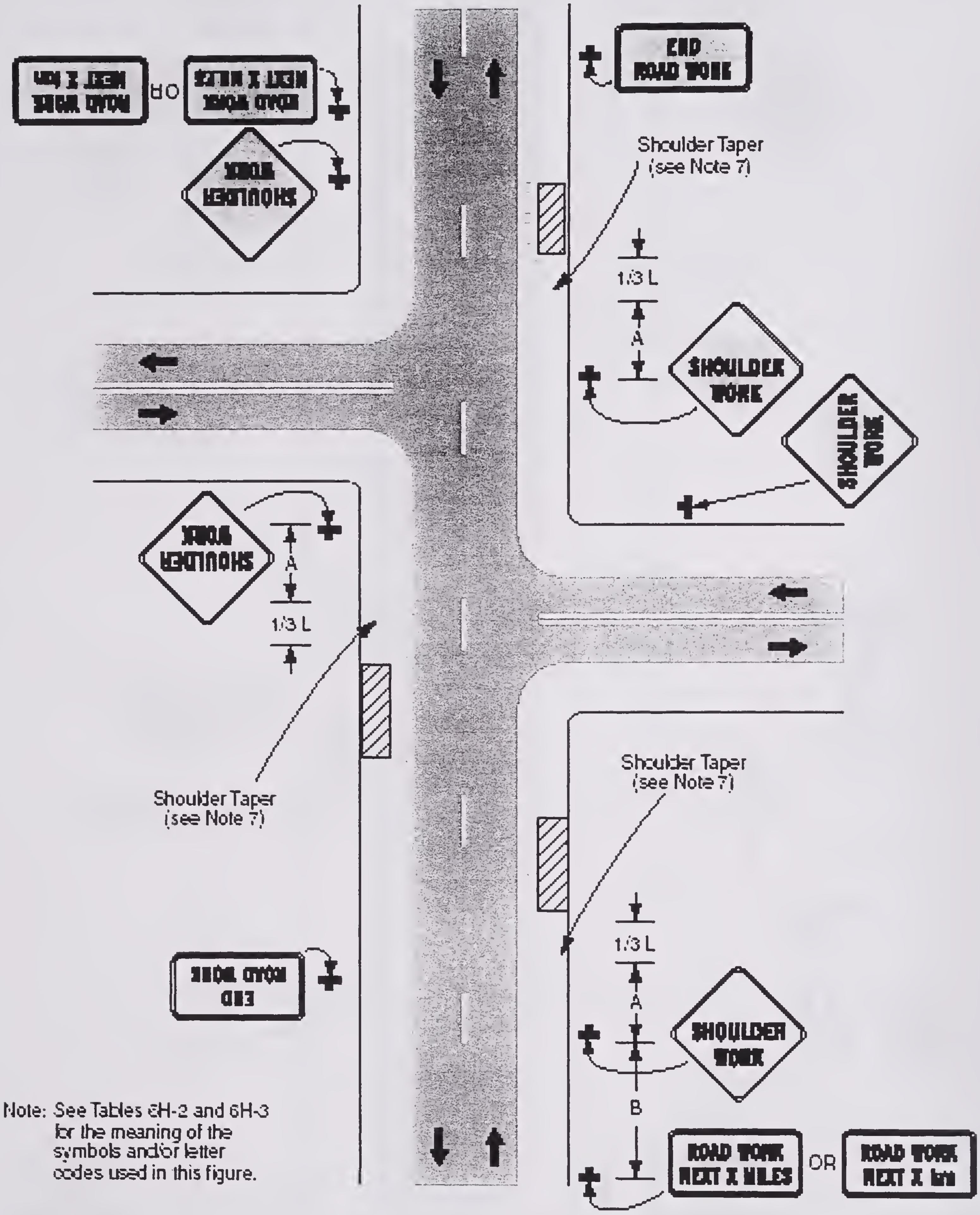
Figure 6H-6. Shoulder Work with Minor Encroachment (TA-6)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 6

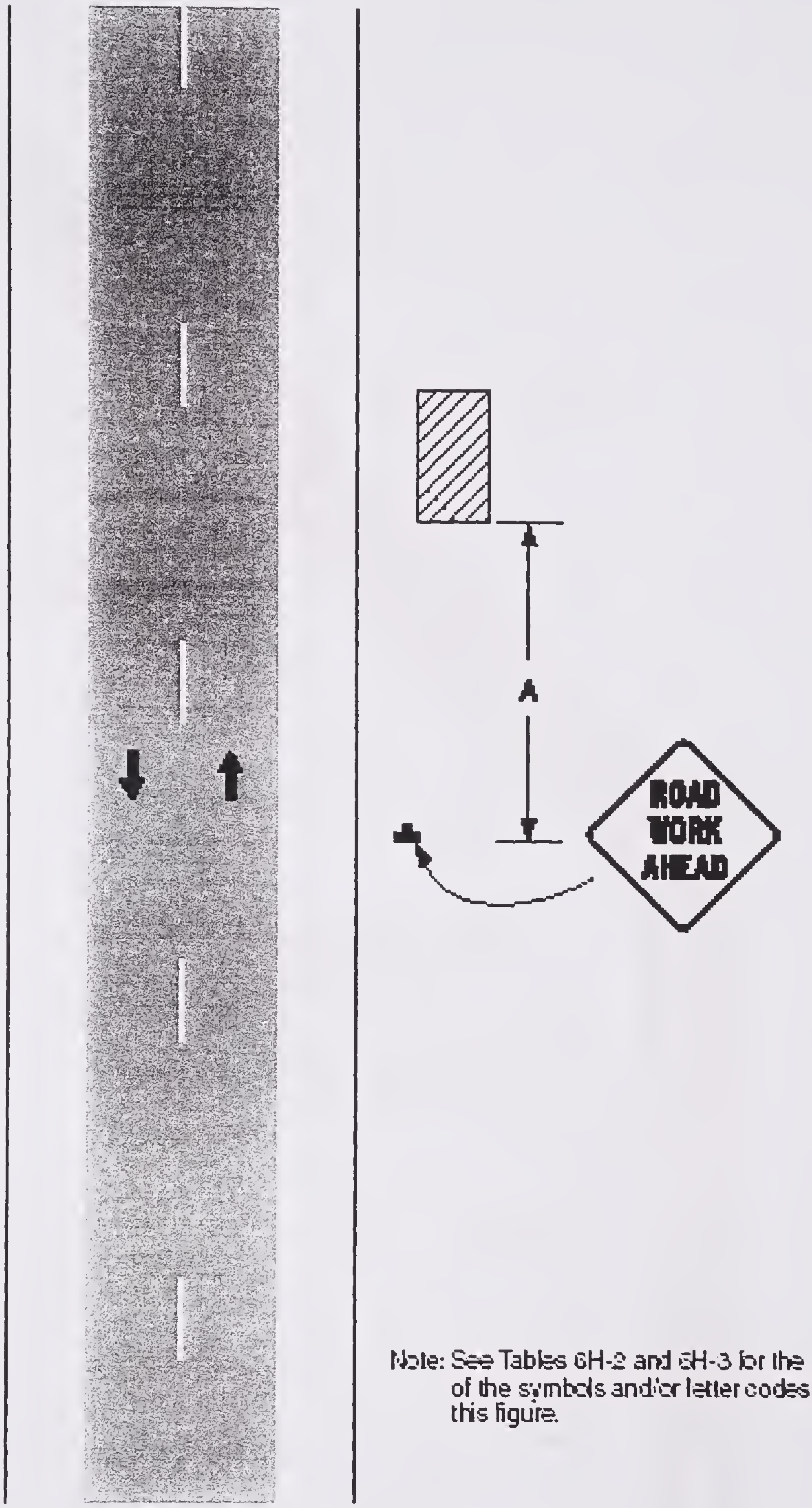
Figure 6H-3. Work on Shoulders (TA-3)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 3

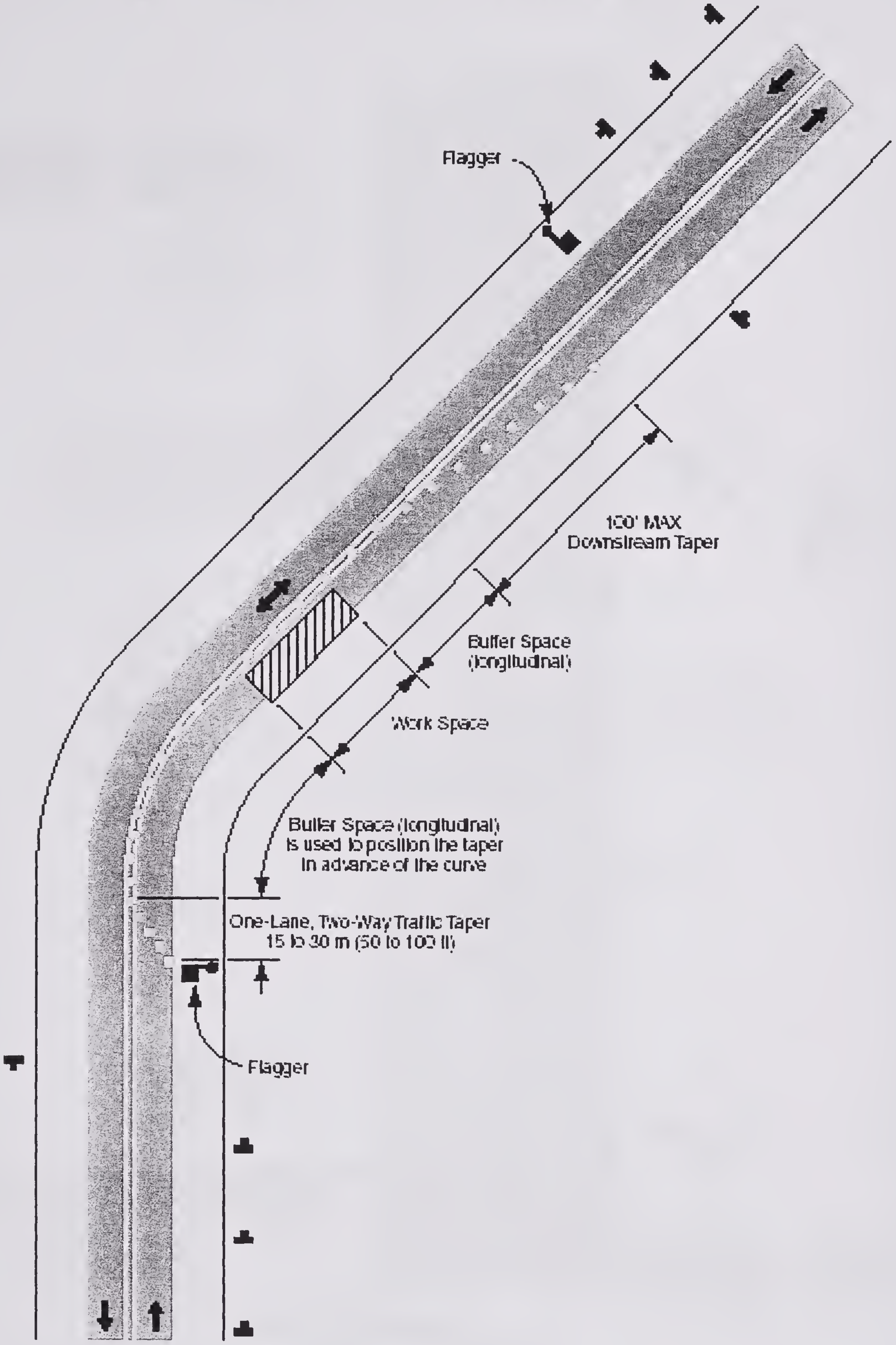
Figure 6H-1. Work Beyond the Shoulder (TA-1)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 1

Figure 6C-3. Example of a One-Lane, Two-Way Traffic Taper


Flagger
100' MAX
Downstream Taper
Buffer Space
(longitudinal)
Work Space
Buffer Space (longitudinal)
is used to position the taper
in advance of the curve
One-Lane, Two-Way Traffic Taper
15 to 30 m (50 to 100 ft)
Flagger

APPENDIX I

BLASTING SPECIFICATIONS

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North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix I
Blasting Specifications

Prepared by

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1940 E. Deere Ave. Suite 200
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February 2006

BLASTING

References:

OMI FF-15	Blasting Guidelines

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NO.	DATE	DESCRIPTION	W.B.S.	DWN	CHKD	APPROVALS		

RECORD OF APPROVALS AND CHANGES

CONSTRUCTION – SPECIFICATIONS	SUPERSEDES 51-E-A-17	
BLASTING	SHEET 1 of 11 SHEETS	
NORTH BAJA PIPELINE, LLC	DRAWING NUMBER 4061-E-S-4	CHANGE 0

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1.0 SCOPE

This Specification outlines the Project areas of concern in the use of explosives along the pipeline Rights-of-Way and is to be used by CONTRACTOR as a guideline in the preparation of its Blasting Procedure. CONTRACTOR'S Blasting Procedure shall recognize that all work may be conducted along existing Rights-of-Way, which parallel and are adjacent to an operating high-pressure natural gas pipeline, and any overhead power and telephone lines.

CONTRACTOR shall be liable for any and all damages to existing facilities resulting from the blasting operations.

The use, storage and transportation of explosives is discussed in Section 3.0. CONTRACTOR and its blasting supervisor shall be thoroughly familiar with the rules and regulations of the U.S. Bureau of Mines, OSHA and with all State, County and Local regulations governing blasting operations. Section 3.0 also discusses the development of the standard shots.

This Specification also outlines the minimum safety requirements to be observed during blasting operations. In its Blasting Procedure, CONTRACTOR shall indicate by alignment stationing, milepost, or by some other approved method of identification, where and how it proposes to conduct its blasting operations and remain within the parameters established herein.

The final section of this Specification deals with the environmental aspects of blasting and outlines some of the areas of concern along the Right-of-Ways. Requirements of Federal, State, County and Local authorities shall be addressed in detail by CONTRACTOR in its Blasting Procedure.

1.1 Blasting Procedure

CONTRACTOR shall submit a detailed Blasting Procedure to North Baja Pipeline, LLC (North Baja) for approval prior to the start of any blasting operations. Acceptance of the Procedure by North Baja shall not relieve CONTRACTOR of responsibility for harmful consequences of its blasting operations, whether performed in accordance with the Procedure or not. The Blasting Procedure shall include the following information:

- Scope of Blasting Project
- Location and site Plan for areas known to require blasting

Typical blasting design criteria including, but not limited to, the following:

- Explosive type
- Delay type and interval
- Initiating methods

- Delay pattern
- Maximum shot hole depth and diameter
- Maximum charge per hole
- Maximum charge per delay
- Distance to nearest belowground structures including existing buried pipelines
- Distance to nearest aboveground structures
- Peak particle velocity monitoring and control
- Proposed fly-rock control method
- Wet sand cover
- Matting (type – construction)
- Other
- Safety
- Reference to Federal, State, County and Local requirements
- Environmental
- Reference to Federal, State, County and Local requirements
- Mitigation methods
- Contingency planning

2.0 CODES AND STANDARDS

The latest applicable edition of the following codes, standards and specifications form a part of this specification:

Code and Federal Regulations (CFR)

18 CFR, Part 2.69	Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Locating, Clearing and Maintenance of Rights-of-Way and the Construction of Above Ground Facilities
27 CFR, Part 181	Commerce in Explosives
29 CFR, Part 1910.109	Explosives and Blasting Agents OSHA
29 CFR, Part 1926.9	Blasting and Use of Explosives
49 CFR, Part 177	Carriage by Public Highway

3.0 USE, STORAGE AND TRANSPORTATION OF EXPLOSIVES

CONTRACTOR'S use, storage and transportation of explosives shall be in compliance with Federal and State regulations and the stipulations contained in the Right-of-Way Grant and Temporary Use Permit, and any revised Federal grants that apply. CONTRACTOR shall provide North Baja with copies of all permits obtained prior to its commencement of blasting operations.

3.1 Permits

CONTRACTOR shall obtain and comply with the permit requirements for California. Application for license to obtain and use explosives is made through the county Sheriffs' office and approved by the State Fire Marshal.

3.2 Performance Requirements

3.2.1 General

The use, storage, transportation and handling of explosives shall be conducted in accordance with the regulations set forth in 29 CFR, Part 1926.

3.2.2 Storage and Transportation of Explosives and Blasting Agents

CONTRACTOR shall outline how it will provide magazines for storage and transportation of explosives and detonators in accordance with the requirements of 29 CFR, Part 1926. The American Table of Distance for Storage of Explosives as approved by the Institute of Makers of Explosives shall govern the location of storage magazines.

3.2.3 Use of Explosives and Blasting Agents

CONTRACTOR shall outline the qualifications of its blaster and the procedures for the following operations: loading of explosives, handling of explosives, electric blasting, firing of blasts, inspection after blasting, misfires and underwater blasting.

The procedures shall be in accordance with the requirements of 29 CFR, Part 1926 and shall ensure that the peak particle velocity at the existing pipeline does not exceed twelve (12) inches per second.

CONTRACTOR'S Procedure shall limit the maximum charge per delay to that specified in the "Pipeline Blasting Criteria" tables (see Attachment A) for a Ground Response Factor of 242. Should CONTRACTOR elect to exceed these criteria by increasing the charge size or by reducing the Ground Response Factor, or both, such a procedure shall require qualification. The procedure qualification shall include the monitoring of a minimum of five (5) test shots with three (3) channel recording seismographs. From these test shots, a scaled distance shall be calculated to establish Standard shot in terms of pounds of explosives per delay. CONTRACTOR shall include in its Blasting Procedure the shot hole array and method of delay to be employed. Production shot delays shall be identical to test shot delays. The tests shall be mandatory for each change in geology, change in explosive manufacturer or change in explosive grade as determined by North Baja.

For any other structures, the allowable peak particle velocity shall be as recommended in the Blaster's Handbook by Dupont, 175th Anniversary Edition, and the United States Bureau of Mines Standard.

3.2.4 Overbreak, Ground Cracking and Block Movement

Prior to proceeding with full-scale blasting operations following a major change in geology, change in explosive manufacturer or change in explosive grade, CONTRACTOR shall conduct a test blast limited in length no greater than twenty (20) feet of ditchline. Following detonation, the area between the blast and the existing pipeline shall be examined for indications of excessive overbreak, cracking and ground displacement (block movement). Overbreak or ground cracks extending one-half (1/2) or more of the distance between these points, or any signs of block movement, shall be cause for CONTRACTOR to immediately suspend blasting operations and review the blasting procedure.

3.2.5 Selection of Blasting Products and Methods

CONTRACTOR'S Blasting Procedure shall describe all blasting products and methods proposed for this Project and the justification for their selection. All of the items listed as typical blasting design criteria in Section 1.1 of this Specification shall be described in detail.

4.0 SAFETY

4.1 This section outlines the minimum safety requirements for blasting. CONTRACTOR shall include in its Procedure all Federal, State, County and Local safety requirements for blasting. CONTRACTOR'S Procedure shall address, as a minimum, the following requirements:

4.2 Explosives shall be stored in a locked magazine in accordance with the practices specified by the United States Bureau of Mines and OSHA. Detonating caps shall not be stored with explosives but shall be stored in a separate location in accordance with the practices specified by the United States Bureau of Mines and OSHA.

4.3 Explosives shall be accounted for at all times. An inventory and use record of all explosives and detonating caps shall be maintained for the Project. Explosives not being used shall be kept in a locked magazine "off-limits" to unauthorized personnel.

4.4 The inventory and use record shall be reconciled at the end of each working day and shall include the number of misfires and their disposition. The inventory and use record shall be available for inspection of the jurisdictional authorities and North Baja at all times.

4.5 Smoking, matches, firearms, open flames and other fire, spark or heat producing devices and the operation of radio transmitters shall be prohibited in or near the explosive magazine or while explosives are being handled, transported or used.

4.6 No loaded holes shall be left unattended or unprotected. No explosives or blasting agents shall be abandoned on the Rights-of-Way. Explosives shall not be primed or fused until immediately before use and shall not be allowed to lay overnight in drilled holes.

4.7 CONTRACTOR shall, at all times, protect its personnel and the public from any injury or harm that might arise from drilling dust and/or the use of explosives. Only personnel thoroughly experienced in the handling of explosives shall be permitted to supervise, handle, transport or load and shoot explosives.

4.8 CONTRACTOR shall exercise caution in the vicinity of power lines, telephone lines, existing pipeline facilities, water wells, caves, structures and adjacent buildings to preclude the possibility of damage due to fly-rock, dust, air blast or vibration.

4.9 CONTRACTOR shall use every reasonable precaution, including but not limited to visual and audible warning signals and flagging and/or barricades to ensure personnel safety. Flaggers shall be stationed on all roadways which pass through the danger zone to stop traffic during blasting operations.

4.10 Warning signs, indicating the blast area, shall be erected and maintained at all approached to the blast area. Warning sign lettering shall be a minimum of four (4) inches in height on a contrasting background. Warning signs shall comply with the requirements or the jurisdictional authorities.

4.11 Notification of blasting operations shall be given to all property owners and residences along the Right-of-Way, as well as owners of facilities (pipelines, power lines, buildings, etc.) in proximity of blasting operations. CONTRACTOR shall comply with the "One Call" notification requirements.

4.12 All jurisdictional authorities, e.g., California State Fire Marshall, shall be granted unrestricted access to all explosive records as well as site access for procedural inspections.

4.13 Prior to the end of the working day, any misfires shall be located and rendered safe.

4.14 CONTRACTOR shall conduct a leak survey after blasting, using a flame ionization unit, for all piping within six hundred sixty (660) feet of the closest charge.

5.0 ENVIRONMENTAL

This section outlines the minimum requirements of CONTRACTOR'S Blasting Procedure for compliance with environmental concerns along the pipeline Rights-of-Way. Refer to site-specific requirements relating to blasting.

CONTRACTOR shall complete an environmental checklist to determine the extent that blasting will affect the environment. The environmental review will overlap with the safety section as both sections are concerned with similar subject matter. The environmental review shall address:

- Land use
- Stream crossings
- Risk of upset
- Human health
- Transportation
- Plant and animal life
- Air quality
- Noise
- Soils and Geology

Each of the above items shall be discussed, as applicable, in the Blasting Procedure.

5.1 Land Use

The Project Line Lists indicate land use. The environmental permits outline land use areas be environmental requirements. CONTRACTOR shall outline how its Blasting Procedure will minimize impacts to local residences, properties, businesses or operation that might be affected by blasting activity.

5.2 Stream Crossings

For major stream crossings, CONTRACTOR shall comply with FERC Stream and Wetland Construction and Mitigation Procedures and site-specific requirements.

5.3 Risk of Upset

CONTRACTOR shall outline how it will limit the risk of upset, e.g., methods of preventing unplanned detonations or the release of hazardous substances.

5.4 Human Health

CONTRACTOR shall identify any known or potential hazards to human health and shall outline how it intends to minimize such hazards, e.g., ensuring the safe use of explosives and the control of chemical vapors or dust generated by blasting.

5.5 Transportation

The Procedure shall describe how the explosives will be transported. Safeguards to be implemented to ensure the public safety during transport shall be discussed, e.g., limiting the size of transport convoys and provisions for official escort.

5.6 Plant and Animal Life

The Procedure shall address environmental concerns with respect to plant and animal life and shall outline procedures to be implemented to protect against changes in diversity or number of species, a reduction in the numbers of any unique, rare or endangered species, or a deterioration to existing habitat.

Blasting shall not be conducted within or near streams without prior consultation with Federal and State conservation authorities having jurisdiction to determine what protective measures shall be taken to minimize damages to fish and other aquatic life.

5.7 Air Quality

The effect of blasting operations on ambient air quality shall be evaluated in CONTRACTOR'S Procedure. A dust abatement program to be implemented during drilling operations shall be included.

5.8 Noise

The Procedure shall review maximum acceptable noise levels and shall examine the potential for increases in existing levels and the extent of anticipated exposure of persons to severe noise levels resulting from blasting operations. CONTRACTOR'S Procedure shall include guidelines for limiting both shot size and frequency to control noise levels.

Also to be included in CONTRACTOR'S Procedure is its proposed methodology for warning nearby residents that may be effected by the blasting operations. Blasting after dark shall only be permitted in case of emergency and with the permission of the authorities having jurisdiction and/or North Baja.

5.9 Soils and Geology

The Procedure shall show that blasting operations will not result in unstable soil or geological conditions that could expose persons or property to hazards such as landslides, mudslides and ground failure. CONTRACTOR shall indicate show it proposed to reduce or curtain any unstable condition that may result from blasting operations.

ATTACHMENT A

North Baja

PIPELINE BLASTING CRITERIA

CHARGE (LBS/DELAY)	1	2	3	4	5	6	7	8	9	10	11	12
TRUE DISTANCE	PEAK PARTICLE VELOCITY – INCHES / SECOND											
30 FT	1.05	1.82	2.52	3.18	3.8	4.39	4.97	5.53	6.08	6.61	7.14	7.65
26 FT	1.32	2.29	3.17	3.99	4.78	5.53	6.25	6.96	7.64	8.31	8.97	9.62
20 FT	2.01	3.49	4.83	6.08	7.27	8.41	9.51	10.58	11.63	**12.65**		
15 FT	3.18	5.53	7.65	9.63	11.51	**13.32**						

(cont'd)

CHARGE (LBS/DELAY)	13	14	15	16	17	18	19	20	21	22
TRUE DISTANCE	PEAK PARTICLE VELOCITY – INCHES / SECOND									
30 FT	8.16	8.66	9.15	9.63	10.11	10.58	11.05	11.51	11.97	**12.43**
26 FT	10.26	10.88	11.5	**12.11**						
20 FT										
15 FT										

BASED ON GROUND RESPONSE FACTOR OF 242

CALCULATIONS BASED ON LEWIS L. ORIARD FORMULA

V = GROUND RESPONSE x (DISTANCE / SQUARE ROOT OF CHARGE PER DELAY) ^ 1.6

SHEET 11 of 11 SHEETS	
DRAWING NUMBER 4061-E-S-4	CHANGE 0

APPENDIX J

GEOLOGIC HAZARDS STUDY

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NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix J
Geologic Hazards Study

Prepared by

Earth Systems Southwest
for

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February 2006

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GEOLOGIC HAZARDS RECONNAISANCE REPORT NORTH BAJA PIPELINE EXPANSION & IID LATERAL LA PAZ COUNTY ARIZONA, RIVERSIDE AND IMPERIAL COUNTIES, CALIFORNIA

December 5, 2005

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File No.: 08312-03
05-12-718

Shelton

Shelton L. Steinour

12/5/05

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Section 1
INTRODUCTION

1.1 Project Description

This Geologic Hazards Reconnaissance Report has been prepared for the proposed North Baja Pipeline Expansion project (NBP) to be constructed from La Paz County, Arizona to Riverside and Imperial Counties, California. The following summary of the projects comes from the Final NOI NOP filed with the California State Lands Commission (CLSC).

North Baja, an indirect wholly owned subsidiary of TransCanada Corporation, has announced its intention to expand its existing natural gas pipeline system in La Paz County, Arizona and Riverside and Imperial Counties, California. The existing North Baja system transports natural gas in a southbound direction. The expansion Project would allow for a northbound flow of gas.

The facilities proposed by North Baja include the following to expand the existing system:

- up to 80 miles of buried 36-inch- or 42-inch-diameter pipeline loop (referred to as the "B-Line") adjacent to its existing 30-inch- and 36-inch-diameter pipeline (referred to as the "A-Line") in La Paz, Riverside, and Imperial Counties;

- one metering station at the interconnect with SoCal Gas in Blythe (Blythe Meter Station);

- one pig receiver at the existing Ehrenberg Compressor Station in La Paz County;

- one pig launcher and one pig receiver at the existing Ogilby Meter Station in Imperial County;

- seven mainline valves along the right-of-way; and

- modifications within the Ehrenberg Compressor Station and Ogilby Meter Station to allow for northbound flow.

In association with its proposed expansion, North Baja proposes to construct a 0.5-mile-long, buried 12-inch-diameter pipeline lateral (Blythe Energy Interconnect Lateral) and associated metering and valving from the proposed Blythe Meter Station north to an interconnect with Blythe Energy's existing supply lateral near Interstate Highway 10 in Riverside County. The lateral would cross privately owned land adjacent to the existing SoCal Gas pipelines and parallel to the D-10-13 Canal and Riviera Drive. North Baja's preferred alignment would be on the east side of the canal; an alternative alignment on the west side of the canal is also under consideration.

North Baja also proposes to construct a new pipeline lateral and associated facilities in Imperial County from an interconnect near the Ogilby Meter Station to the existing Imperial Irrigation District (IID) El Centro Generating Station. The lateral would deliver up to 100 million cubic feet per day of natural gas to the IID El Centro Generating Station. The IID is considering a future expansion of the station to meet growing power demand.

The IID Lateral facilities proposed by North Baja include:

- approximately 46 miles of buried 16-inch-diameter pipeline lateral (IID Lateral);
- one metering station at the interconnect with the IID El Centro Generating Station (IID El Centro Meter Station);
- one pig launcher at a tap off the A-Line near the Ogilby Meter Station;
- one pig receiver at the IID El Centro Generating Station; and
- up to five block valves along the right-of-way.

North Baja's preferred route of the IID Lateral would cross approximately 30 miles of federal land in Imperial County. The route on federal land deviates from designated utility corridors at one location for about 10 miles, where it would parallel Interstate Highway 8. Most of the IID Lateral would be installed in public road rights-of-way.

Figures of the proposed facilities are provided in Appendix A. Figure 1 depicts a general overview of the major Project facilities. Figure 1 also depicts North Baja's preferred route for the B-Line in the Palo Verde Valley (adjacent to the A-Line along 18th Avenue) and an alternative route under consideration in the Palo Verde Valley along 22nd Avenue. Figure 2 depicts North Baja's preferred route for the IID Lateral and various alternative routes under consideration...

1.2 Purpose and Scope of Study

The purpose for our services was to evaluate potential geologic hazard conditions and to provide professional opinions regarding the geologic constraints for the pipeline project. The scope of work included the following:

- Review of relevant geotechnical and geological literature, including reports and maps from the United States Geological Survey, the California Geological Survey, and other relevant information.
- Limited site reconnaissance of the north half of the pipeline route.
- Engineering analysis and evaluation of the acquired data to identify potential geotechnical or geological constraints that could include: faulting, groundshaking, secondary seismic hazards, landsliding, rock fall hazard, and erosion.
- A summary of our findings and recommendations in this written report.

Earth Systems Southwest previously conducted a quantitative analysis of the soil liquefaction hazard in a separate Liquefaction Hazard Evaluation and Mitigation (LHEM) report.

Screening Investigation Purpose: The purpose of this screening investigation is to evaluate the severity of potential geologic hazards and to screen out areas that have a low potential for geologic hazards. Where this screening investigation demonstrates the absence of geologic hazards along the pipeline route, and if the lead agency technical reviewer concurs with this finding, this screening investigation will satisfy the site-investigation report requirement of CGS Special Publication 117 and no further investigation will be required. Where the findings of this screening investigation indicate the presence of geologic hazards, then a more-comprehensive quantitative evaluation may need to be conducted.

Section 2
METHODS OF INVESTIGATION

2.1 Field Exploration

18th Avenue and Ehrenberg Compressor Site: Earth Systems Southwest conducted geotechnical exploration at the Ehrenberg Compressor Station site and along 18th Avenue. Along the 18th Avenue alignment, four exploratory borings were drilled to a depth of about 51.5 feet on August 9, 2001. At the Ehrenberg Compressor site, six exploratory borings were drilled to depths ranging from 26.5 to 51.5 feet on August 10, 2001.

Ogilby Meter Station: Earth Systems Southwest conducted geotechnical exploration at the Ogilby Meter Station site. One exploratory boring was drilled to a depth of 26.5 feet on September 28, 2001.

Colorado River and All American Canal Crossings: The LawGibb Group under contract to Willbros Engineers, Inc conducted geotechnical exploration for two crossing sites. At the Colorado River Crossing, four exploratory borings were drilled to a depth of about 90 to 91.5 feet on October 9 to 11, 2000. At the All American Canal Crossing, three exploratory borings were drilled to a depth of about 91.5 feet October 16 to 19, 2000.

These boring logs are presented in the Liquefaction Hazard Evaluation and Mitigation and geotechnical reports prepared by Earth Systems Southwest.

2.2 Geologic Studies

Air Photo Review: A set of vertical aerial photographs was reviewed stereoscopically for indications of landsliding or other ground movements at the edge of the Palo Verde Mesa (Milepost 11.6 to 11.8) where the pipeline would traverse up the mesa face.

Site Reconnaissance: Our associate geotechnical engineer/geologist conducted a site reconnaissance of the pipeline route from the Ehrenberg Compressor Station to Ogilby Meter Station site and the IID lateral. The purpose of this limited reconnaissance was to verify site conditions of potentially critical areas of the proposed pipeline route for geologic hazards.

Slope Terrain Analyses: The calculation of slope gradient is an essential part of the evaluation of slope stability. To calculate slope gradient for the terrain within the study area, 7.5- minute quadrangle digital elevation models (DEM) were obtained from the U.S. Geological Survey. These DEMs have a resolution of 30-meters. A slope-gradient map was made from the combined DEMs using the MicroDEM program.

Section 3
DISCUSSION

3.1 Surficial Soil Conditions at Selected Sites

Ehrenberg Compressor Site (Milepost 0): The field exploration indicates that soils consist primarily of an upper surficial layer of silt that is 2 to 8 feet thick, underlain with medium dense to loosely deposited sand and some silty sand.

Colorado River Crossing (Milepost 0 to 0.5): The field exploration indicates that soils consist generally of loose to dense silty sand and sand with some gravel.

18th Avenue Alignment (Milepost 2.4 to 11.6): The field exploration indicates that soils consist generally of an upper layer of cohesive clayey soil underlain by sand to silty sand.

Ogilby Meter Station (Milepost 75.2): The field exploration indicates that soils consist generally of very dense, silty sand.

All American Canal Crossing (Milepost 79.6 to 79.8): The field exploration indicates that soils consist generally of medium dense to dense silty sand.

3.2 Groundwater

Measured Groundwater Levels from Exploration: Free groundwater was encountered in the borings at the following depths at selected sites.

Site	Milepost	Measured Groundwater Depth (feet)
Ehrenberg Compressor	0	17
Colorado River Crossing	0 to 0.5	13 to 23
18th Avenue Alignment	2.4 to 11.6	9 to 16.5
All American Canal Crossing	79.6 to 79.8	29 to 31

However, there is uncertainty in the accuracy of short-term water level measurements. Groundwater levels may fluctuate with irrigation, drainage, regional pumping from wells, and site grading. The groundwater levels detected may not represent an accurate or permanent condition.

Estimated Groundwater Levels in the PaloVerde Valley region: USGS Professional Paper 486-G provides a groundwater contour map of the Palo Verde Valley and region. An excerpt of this map is presented on Figure 9.

Estimated Groundwater Levels in the Imperial Valley region: USGS Professional Paper 486-K provides a groundwater contour map of the Imperial Valley and region. An excerpt of this map is presented on Figure 10.

3.3 Regional Geologic Setting

Ehrenberg Compressor Site, Colorado River Crossing, and 18th Avenue (Milepost 0 to 11.6): These areas lie in the Palo Verde Valley, which consists of approximately 1,000 feet of alluvial and sedimentary gravel, sand, silt, and clay deposits of the Colorado River Flood Plain. The Flood Plain in the Blythe area consists of approximately 100 feet of Younger (Holocene) alluvium consisting of sands, silts, clays, and some gravel. The younger alluvium is directly underlain by approximately 500 feet of older (Pliocene and Pleistocene) alluvium of soils similar to the younger alluvium. These soils are the result of several broad periods of degradation and aggradation by the Colorado River. The alluvial soils in the Blythe area reach to approximately 600 feet where the soil formation changes to a Pliocene age embankment deposit of the Gulf of California known as the Bouse Formation. This formation is composed of tufa and basal limestone overlain by interbedded clay, silt, and sand.

Palo Verde Mesa (Milepost 11.6 to 22.5): The Palo Verde Mesa consists of piedmont on the west side of the Palo Verde Valley that consists of older alluvium with lower terrace deposits at the valley wall. The mesa is dissected with several alluvial washes.

Palo Verde Peak Area (Milepost 22.5 to 36): The NBP route through this area traverses around the base of foothills that comprise the Palo Verde Mountains. The Palo Verde Mountains consist primarily of Tertiary volcanic rocks that form ragged peaks with a topographic high of about 1795 feet above mean sea level. Older alluvium fanglomerate and conglomerate deposits flank the mountains. Some Bouse Formation exposures are found at the base of the mountains. Recent alluvium lies within the floodplain of the Colorado River at the eastern base of the mountains and foothills.

Milpitas Wash to Ogilby (Milepost 36 to 71): The NBP route through this area traverses across the Milpitas Wash, a major alluvial drainage system, piedmont, and alluvial washes in the Arroyo Seco area through the Chocolate Mountains, and piedmont on the southeast side of the Chocolate Mountains. The piedmonts consist of older alluvium that is dissected with numerous alluvial washes.

Ogilby to All American Canal Crossing (Milepost 71 to 79.8): The NBP route through this area straddles the dividing line between the Salton Trough and the Mojave Desert section of the Southern Basin and Range physiographic province. This area lies on the Pilot Knob Mesa near the Algodones sand dunes to the west. The mesa soils consist of older and recent alluvium consisting of fine to coarse-grained sands with gravels, and cobbles.

The Algodones Fault trends northwest to southeast and is inferred to lie nearly parallel with the proposed NBP route from Milepost 75.5 to 79.5. The Algodones Fault is the dividing line between the Salton Trough and Southern Basin and Range.

IID Lateral: The IID lateral traverses across the Salton Trough physiographic province. The Salton Trough is a broad structural depression resulting from large scale regional faulting associated with horizontal slip along the San Andreas Fault System. The San Andreas Fault and inactive Sand Hills Fault bound the trough on the northeast. The San Jacinto Fault Zone bounds the trough on the southwest. The Salton Trough represents the northward extension of the Gulf of California that has experienced continual in-filling with both marine and non-marine sediments since its approximate formation in the Miocene Epoch.

A high level of seismicity from active northwest-trending faults and oceanic-type spreading centers characterizes the Salton Trough. Seismicity in the Salton Trough is concentrated between the offsets of three major transform faults - San Andreas, Imperial, and Cerro Prieto. Geodetic measurement, as well as historic and geomorphic evidence of recent fault movement, indicate a high rate of tectonic activity in the area.

The Imperial Valley is directly underlain by Holocene (0 - 11,000 years before present) Cahuilla Lake beds, which consist of interbedded lenticular and tabular silt, sand, and clay. The Holocene lake deposits are probably less than 100 feet thick. The Pleistocene Brawley Formation underlies the Cahuilla Lake beds. The Brawley Formation consists of at least 2,000 feet of gray clay, sand, and pebbles, which in turn overlie about 6,000 feet of the late Pliocene Borrego Formation. The Borrego Formation consists of lacustrine gray clay and sand. The Borrego Formation overlies an indeterminate thickness of the Pliocene marine Imperial Formation, Alverson Andesite, and Miocene continental sediments of the Split Mountain Formation. Basement rock consisting of Mesozoic granite and probably Paleozoic metamorphic rocks are estimated to exist at depths between 15,000 - 20,000 feet. Thicknesses of the various geologic formations are approximate.

3.4 Geologic Units

The proposed route of the NBP will generally encounter eight mapped geologic units. The mapped units are shown on the Geologic Maps, Figures 3 to 6. For the purposes of screening for geologic hazards, we used published geologic maps at 1:250,000 and 1:125,000 scales, combined with limited field reconnaissance along the proposed route of the pipeline. The following geologic units will be encountered during construction of the pipeline.

Quaternary lake deposits (Ql): The Imperial Valley, where the west section of the IID lateral crosses, is composed of lake deposits of ancient Cahuilla Lake beds that consist of interbedded lenticular and tabular silt, sand, and clay.

Quaternary Alluvium (Qal): Holocene alluvial deposits are mapped across the Palo Verde Valley and numerous washes. The alluvium in the Palo Verde Valley consists of unconsolidated sands, silts, clays, and some gravel. The washes generally consist of unconsolidated sand and gravels with some silts. The mid-section of the IID lateral crosses the East Mesa consisting of Holocene alluvial deposits.

Dune Sand (Qs): Unconsolidated sand and silty sand of both Holocene and Pleistocene origin. Extensive dune sand is mapped to the west of the NBP Milepost 75 to 79.8. The IID lateral crosses the Algodones sand dune field along the All American Canal.

Pleistocene Non-marine Older Alluvium & Fanglomerate (Qc): Dissected flat to gently sloping alluvium is common from Milepost 11.6 to 79.8. These poorly consolidated silts, sands, and gravels typically form desert pavement terraces coated with desert varnish between dry washes. The alluvium is generally locally derived, poorly sorted, angular, and reflects the lithology of the mountainous areas flanking these deposits.

Tertiary Volcanic Rock (Tv): Undifferentiated volcanic rock comprises the Palo Verde Mountains and smaller outcrops near the NBP route.

Bouse Formation (Tbs): Interbedded marine to brackish water limestone, siltstone, sandstone, and tufa of Tertiary origin outcrops intermittently along the base of the Palo Verde Mountains.

Non-marine Clastic Volcanic Conglomerate (Tc): Non-marine clastic volcanic conglomerate outcrops along the NBP route at the flank of the Palo Verde Mountains.

Miocene Non-marine Sedimentary Deposits (Mc): Non-marine sedimentary fanglomerate deposits composed of cemented gravel occur in limited outcrops along the NBP route.

3.5 Geologic Hazards

Geologic hazards that may affect the pipeline include seismic hazards (surface fault rupture, ground shaking, soil liquefaction, and other secondary earthquake-related hazards), slope instability, and erosion. A discussion follows on the specific hazards to the project.

3.5.1 Seismic Hazards

Seismic Sources: Several active faults or seismic zones lie within 93 miles (150 kilometers) of the project areas as shown on Tables 1 through 3 and Figure 7 in Appendix A. The primary seismic hazard to the pipeline project is moderate groundshaking from earthquakes along the San Andreas and Imperial Valley Faults. The Maximum Magnitude Earthquake (M_{max}) listed is from published geologic information available for each fault (Cao et al., CGS, 2003). The M_{max} corresponds to the maximum earthquake believed to be tectonically possible.

Surface Fault Rupture: The NBP route does not lie within any currently delineated State of California, *Alquist-Priolo (A-P)* Earthquake Fault Zones (Hart, 1997). Well-delineated fault lines cross through this region as shown on California Geological Survey (CGS) maps (Jennings, 1994). Therefore, active fault rupture is unlikely to occur along the NBP route. While fault rupture would most likely occur along previously established fault traces, future fault rupture could occur at other locations.

However, the IID lateral crosses the Imperial fault. This fault ruptured in both 1940 and 1979. In 1979, about 50 to 70 cm of cumulative right lateral displacement was measured occurring on two splays of the fault line near Interstate 8 where the preferred IID lateral route crosses. An excerpt of the A-P fault map at the Imperial fault is shown on Figure 8. Based on an estimated characteristic return rate of 79 years and 20 mm/yr geologic slip rate, an expected characteristic fault displacement of about 5 feet (1.6 m) may be anticipated for future ruptures, but could be locally greater as occurred in the 1940 event.

Algodones Fault: The inferred trace of the Algodones fault trends nearly parallel with the proposed NBP from Milepost 75.5 to 79.5. The fault appears to be an ancestral continuation to the southeast of the San Andreas transform fault of southeastern California, southwestern Arizona and northern Sonora, Mexico. The Algodones Fault is shown on most geologic and fault maps of the Yuma area but is concealed by young sediments.

Studies by Woodward-McNeill (1974) and Dames and Moore (1985) for the Salt River Dual Use

Nuclear Plant and the Yuma Water Users Hydroelectric Plant project, respectively, have stated that the most recent activity along the Algodones Fault was pre-Holocene (11,000 years before present). An extensive fault investigation was performed to determine, in part, if the Algodones Fault was capable of future rupture or generating a major earthquake. The investigators found that the Algodones Fault is an east dipping normal fault confined to the western margin of the Fortuna Basin in Arizona (Heath, 1992). No evidence was found to indicate the Algodones Fault projected into California. West of Yuma, west dipping normal faults were identified and these most likely represent the eastern edge of the Salton Trough and are probably related to the East Mesa Fault (Heath, 1992).

A pattern of episodic release of stress in moderate to large events at the north end of the Algodones fault is supported by the study of Quaternary tectonics of the Yuma region conducted by Bull (1974) as part of the Woodward-McNeill report. Analysis of the data from trenches across the Algodones Fault in the Yuma region suggests that this portion of the fault has moved within the last 15,000 years (late Pleistocene). Further, paleosols indicated that characteristic movement along the fault has not occurred as continuous creep but consists of intermittent movement of several feet followed by periods of stability. The total late Pleistocene movement was estimated as 50 feet. The last movement, representing a single earthquake, was about 3 to 5 feet (Bull, 1974).

Imperial Fault: The Imperial fault is a right-lateral fault that connects the oceanic-type spreading centers located at the Brawley Seismic Zone and the Cerro Prieto geothermal area. The Imperial Fault is about 60 miles in length. It has produced at least two large historic earthquakes. The largest events were the 7.0M_w on May 18, 1940 and 6.5M_w on October 15, 1979.

The Brawley fault trends to the north from an intersection with the Imperial Fault at a location about four miles northeast of the City of El Centro. This fault has a surface expression approximately 9 miles long. The Imperial and Brawley faults have ruptured synchronously during past earthquakes. The California Geological Survey assigns a geologic slip rate of 20 mm/year, and a characteristic magnitude Mmax of 7.0 with an average 79-year return period (CDMG, 1996).

Historic Seismicity: The Imperial Valley is among the most seismically active regions in the nation. Figure 7 shows the significant earthquakes that have been recorded in the region. Five significant historic seismic events (5.8M or greater) have significantly affected the Imperial Valley in the last 100 years. They are as follows:

- *Imperial Valley Events* - On June 22, 1915 twin magnitude 6.0 and 5.9M_S earthquakes occurred about an hour apart near El Centro resulting in at least six deaths (Ellsworth, 1990).
- *El Centro Event* - On May 19, 1940 a magnitude 7.1M_S (7.0M_W) earthquake ruptured the Imperial Fault with horizontal offsets up to 19 feet and triggered widespread liquefaction as evidenced by sand boils throughout the valley (Sylvester, 1979).
- *Imperial Valley Events* - On October 15, 1979 a magnitude 6.6M_S (6.5M_W) earthquake ruptured the Imperial Fault again with horizontal offsets of about 2 feet and triggered widespread liquefaction as evidenced by sand boils throughout the valley. A magnitude 5.8M_L event occurred as an aftershock along the Brawley Fault on the evening of October 15, 1979 (US Geological Survey, 1982).

- *Westmorland Event* - On April 26, 1981, a magnitude 6.0M_S (5.9M_W) earthquake occurred 4 miles north of Westmorland and triggered widespread liquefaction. Although there was not surface faulting associated with this earthquake, canals and buildings were damaged. Liquefaction also occurred in the Brawley Seismic Zone after M5+ earthquakes in 1930, 1950 and 1957.
- *Superstition Hills Events* - On November 24, 1987, a magnitude 6.6M_S (6.5M_W) earthquake ruptured the Superstition Hills Fault causing over 15 miles of right lateral offset (26 in. maximum) and triggered liquefaction from the Salton Sea to Seeley. A magnitude 6.2M_L (5.9M_W) event occurred as a foreshock along the Elmore Ranch Fault on November 23.

Secondary Seismic Hazards: Secondary seismic hazards related to ground shaking include soil liquefaction, ground deformation, areal subsidence, tsunamis, and seiches. The site is far inland so the hazard from tsunamis is non-existent. At the present time, no water storage reservoirs are located in the immediate vicinity of the site. Therefore, hazards from seiches are considered negligible at this time.

3.5.2 Ground Shaking and Site Acceleration

The potential intensity of ground shaking motion may be estimated from the horizontal peak ground acceleration (PGA), measured in "g" forces. Included in Tables 1 to 3 are deterministic estimates of site acceleration from possible earthquakes at nearby faults at three representative locations along the pipeline route. Ground motions are dependent primarily on the earthquake magnitude and distance to the seismogenic (rupture) zone. Accelerations also are dependent upon attenuation by rock and soil deposits, direction of rupture, and type of fault. For these reasons, ground motions may vary considerably in the same general area. This variability can be expressed statistically by a standard deviation about a mean relationship.

In our evaluation of peak ground acceleration (PGA) we averaged three attenuation relationships: Boore et al. 1997; Sadigh et al, 1997; Abrahamson & Silva, 1997, and Campbell, 2003. Each attenuation relationship has their strengths and limitations. For this reason, the USGS used an equally weighted average of these four in their National Strong Motion Mapping Program.

The following table provides the probabilistic estimate of the PGA, EPA, PGV and Spectral Accelerations taken from the 2002 CGS/USGS seismic hazard maps and interactive seismic deaggregations available at the USGS National Strong Motion Mapping Program website. These values have been adjusted for alluvium soils, Soil Profile Type, S_D.

Estimate of PGA, EPA, PGV, and Spectral Accelerations from 2002 CGS/USGS Probabilistic Seismic Hazard Maps

Ehrenberg Station, Riverside County, California
Modal Magnitude 7.6, Modal Distance 113 km

Risk of Exceedance	Equivalent Return Period (years)	PGA (g)	EPA (g)(2)	PGV (3) (cm/sec)	Spectral Acceleration Sa (0.2 sec.)	Spectral Acceleration Sa (1.0 sec.)
10% in 50 years (DBE)	475	0.12	0.11	33	0.28	0.19
2% in 100 years (MCE)	2475	0.20	0.20	48	0.51	0.31

Ogilby Meter Station, Imperial County, California
Modal Magnitude 6.9, Modal Distance 45 km

Risk of Exceedance	Equivalent Return Period (years)	PGA (g)	EPA (g)(2)	PGV (3) (cm/sec)	Spectral Acceleration Sa (0.2 sec.)	Spectral Acceleration Sa (1.0 sec.)
10% in 50 years (DBE)	475	0.23	0.23	53	0.58	0.34
2% in 100 years (MCE)	2475	0.42	0.42	84	1.02	0.56

IID Lateral at Imperial Fault, Imperial County, California
Modal Magnitude 6.9, Modal Distance 0 km

Risk of Exceedance	Equivalent Return Period (years)	PGA (g)	EPA (g)(2)	PGV (3) (cm/sec)	Spectral Acceleration Sa (0.2 sec.)	Spectral Acceleration Sa (1.0 sec.)
10% in 50 years (DBE)	475	0.87	0.84	204	2.10	0.83
2% in 100 years (MCE)	2475	0.83	0.83	203	2.07	0.87

Notes:

1. Values are adjusted from soft rock site, $S_{B/C}$. The soil amplification factors to adjust to Soil Profile Type S_D for PGA, Sa (0.2 sec), and Sa (1.0 sec), are as follows:
   Ehrenberg: 1.5, 1.5, 2.0, respectively.
   Ogilby: 1.2, 1.2, 1.8, respectively.
   IID Lateral at Imperial Fault: 1.0, 1.0, 1.5, respectively
2. EPA = Effective Peak Acceleration, derived from Spectral acceleration (S_A) at period of 0.2 seconds divided by scaling factor of 2.5 for 5% damping.
3. PGV = Peak Ground Velocity, derived from Sa (1.0 sec).
4. DBE = Design Basis Earthquake for California (Uniform) Building Code.
5. MCE = Maximum Considered Earthquake for International Building Code (ASCE 7), deterministic limit at Imperial fault
6. For other locations along the pipeline, a first order estimate of ground motion parameters may be obtained by interpolation between the tables.

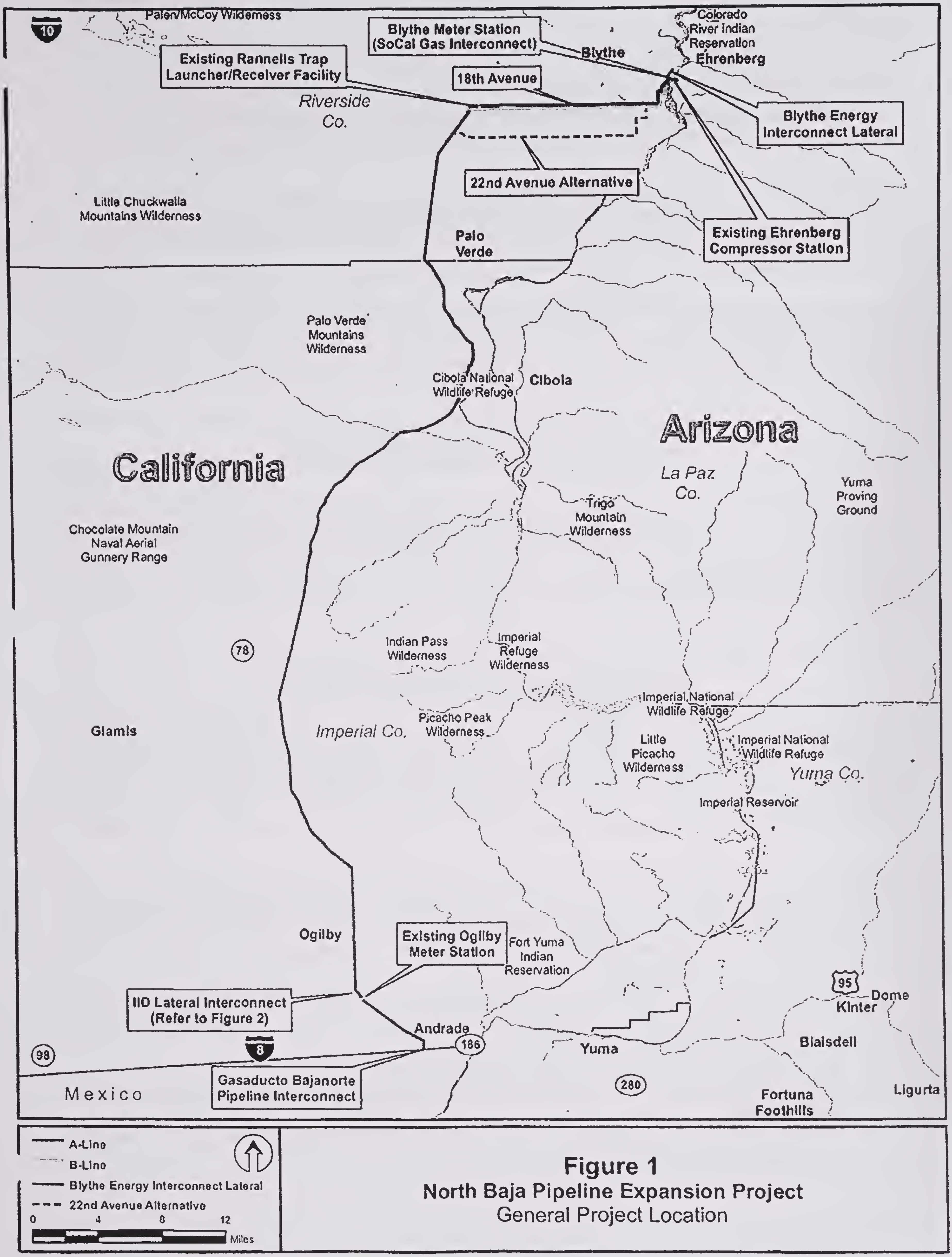

10
Palen/McCoy Wilderness
Blythe Meter Station (SoCal Gas Interconnect)
Existing Rannells Trap Launcher/Receiver Facility
18th Avenue
Blythe
Colorado River Indian Reservation
Ehrenberg
Blythe Energy Interconnect Lateral
Riverside Co.
22nd Avenue Alternative
Existing Ehrenberg Compressor Station
Little Chuckwalla Mountains Wilderness
Palo Verde
Palo Verde Mountains Wilderness
Cibola National Wildlife Refuge
Cibola
Arizona
California
La Paz Co.
Yuma Proving Ground
Trigo Mountain Wilderness
Chocolate Mountain Naval Aerial Gunnery Range
78
Indian Pass Wilderness
Imperial Refuge Wilderness
Imperial National Wildlife Refuge
Glamis
Imperial Co.
Picacho Peak Wilderness
Little Picacho Wilderness
Imperial National Wildlife Refuge
Yuma Co.
Imperial Reservoir
Ogilby
Existing Ogilby Meter Station
Fort Yuma Indian Reservation
95
Dome
Kinter
IID Lateral Interconnect (Refer to Figure 2)
Andrade
186
8
98
Yuma
Blaisdell
Gasaducto Bajanorte Pipeline Interconnect
280
Mexico
Fortuna Foothills
Ligurta
A-Line
B-Line
Blythe Energy Interconnect Lateral
22nd Avenue Alternative
0
4
8
12
Miles

Figure 1
North Baja Pipeline Expansion Project
General Project Location

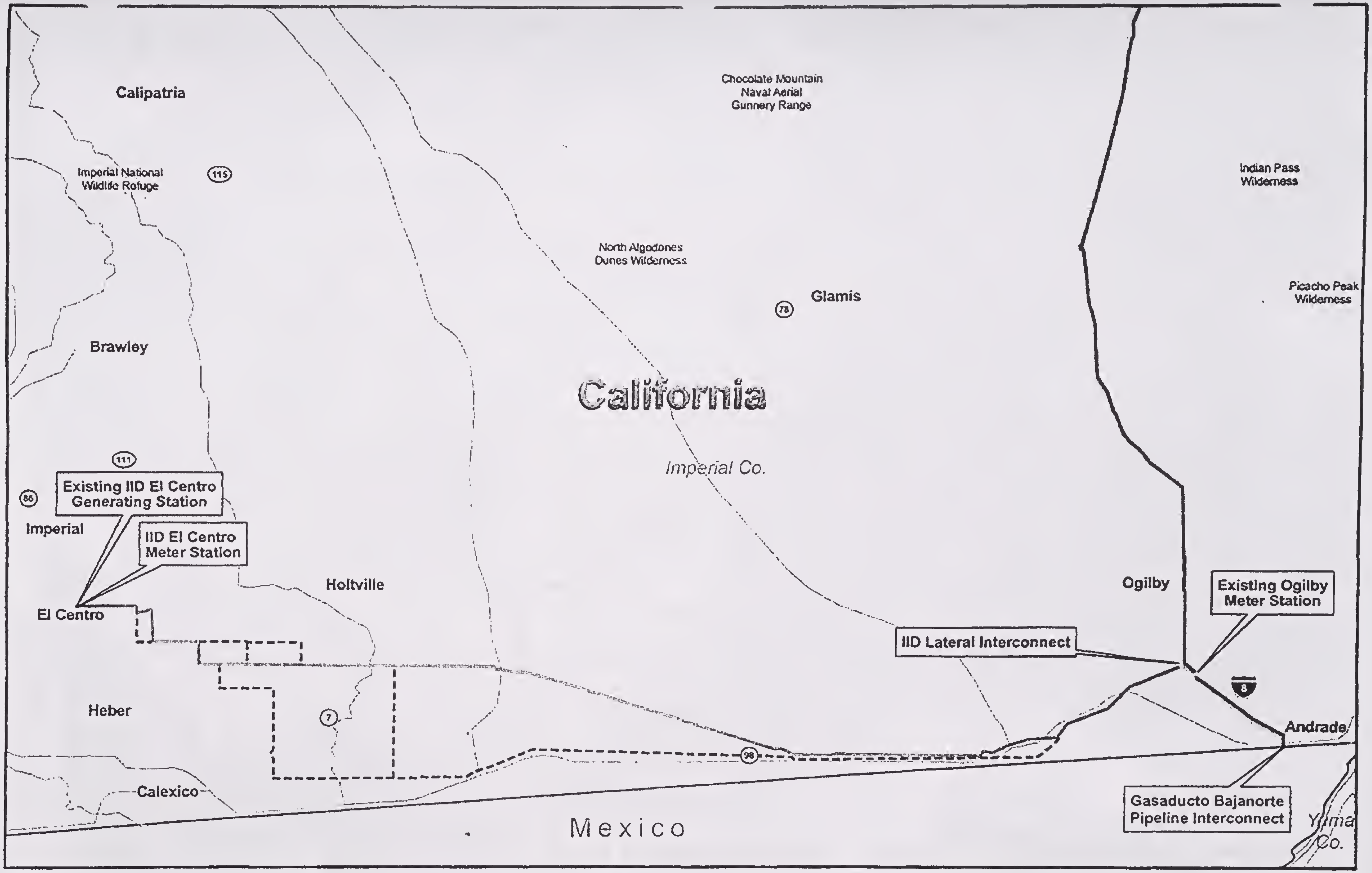
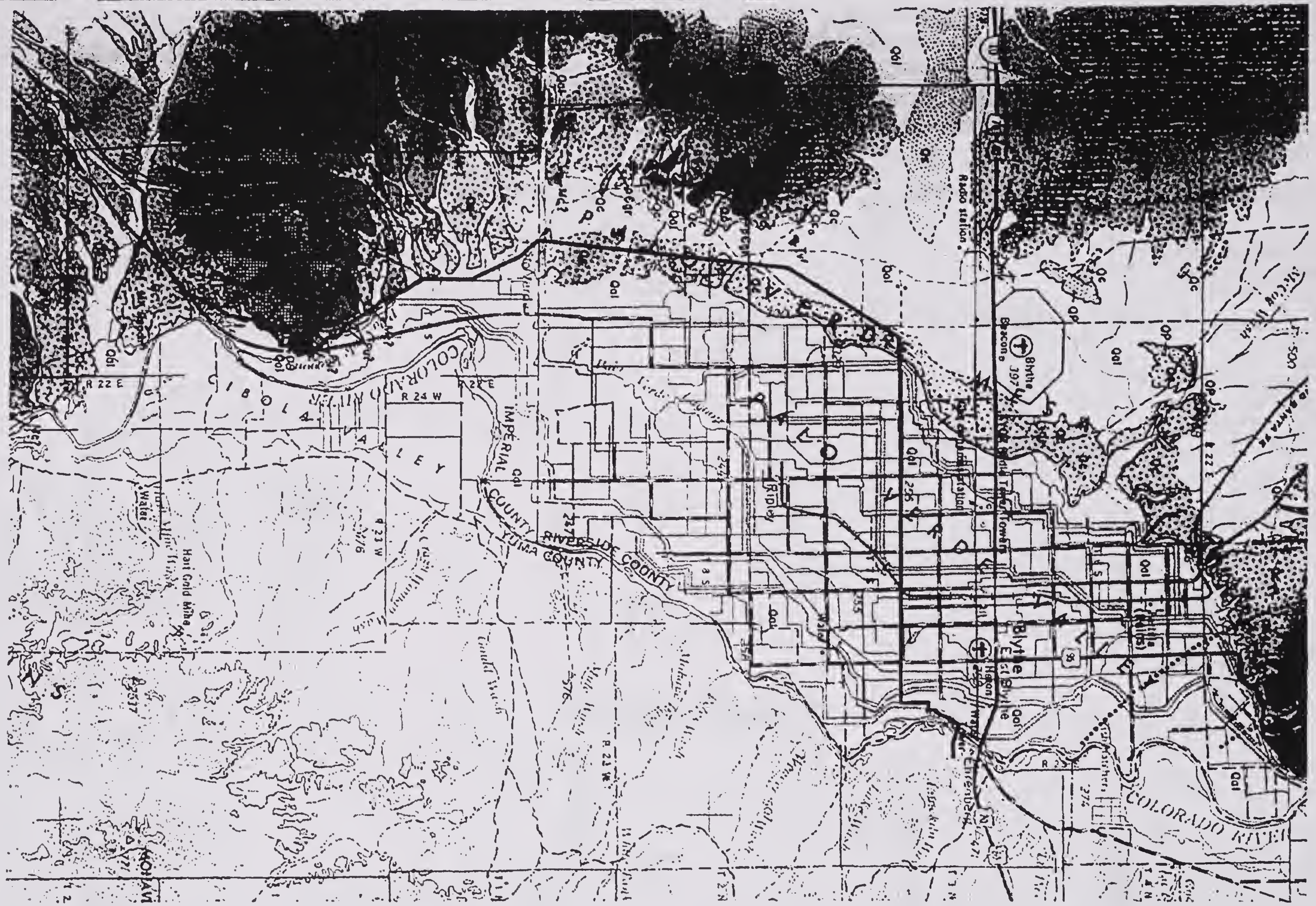

Calipatria
Imperial National Wildlife Refuge
115
Brawley
111
86
Existing IID El Centro Generating Station
Imperial
IID El Centro Meter Station
El Centro
Holtville
Heber
7
Calexico
Chocolate Mountain Naval Aerial Gunnery Range
North Algodones Dunes Wilderness
Glamis
78
California
Imperial Co.
98
Mexico
Indian Pass Wilderness
Picacho Peak Wilderness
Ogilby
Existing Ogilby Meter Station
IID Lateral Interconnect
8
Andrade
Gasaducto Bajanorte Pipeline Interconnect
Yuma Co.
A-Line
B-Line
North Baja's Preferred IID Lateral Route
IID Lateral Alternative Routes
0
4
8
Miles

Figure 2

North Baja Pipeline Expansion Project

North Baja's Preferred IID Lateral Route and IID Lateral Alternative Routes



Reference: *Geologic Map of California, Salton Sea Sheet (1967)*

North Baja Pipeline Route

Scale: 1" = 4 miles (1:250,000)

0 4 8

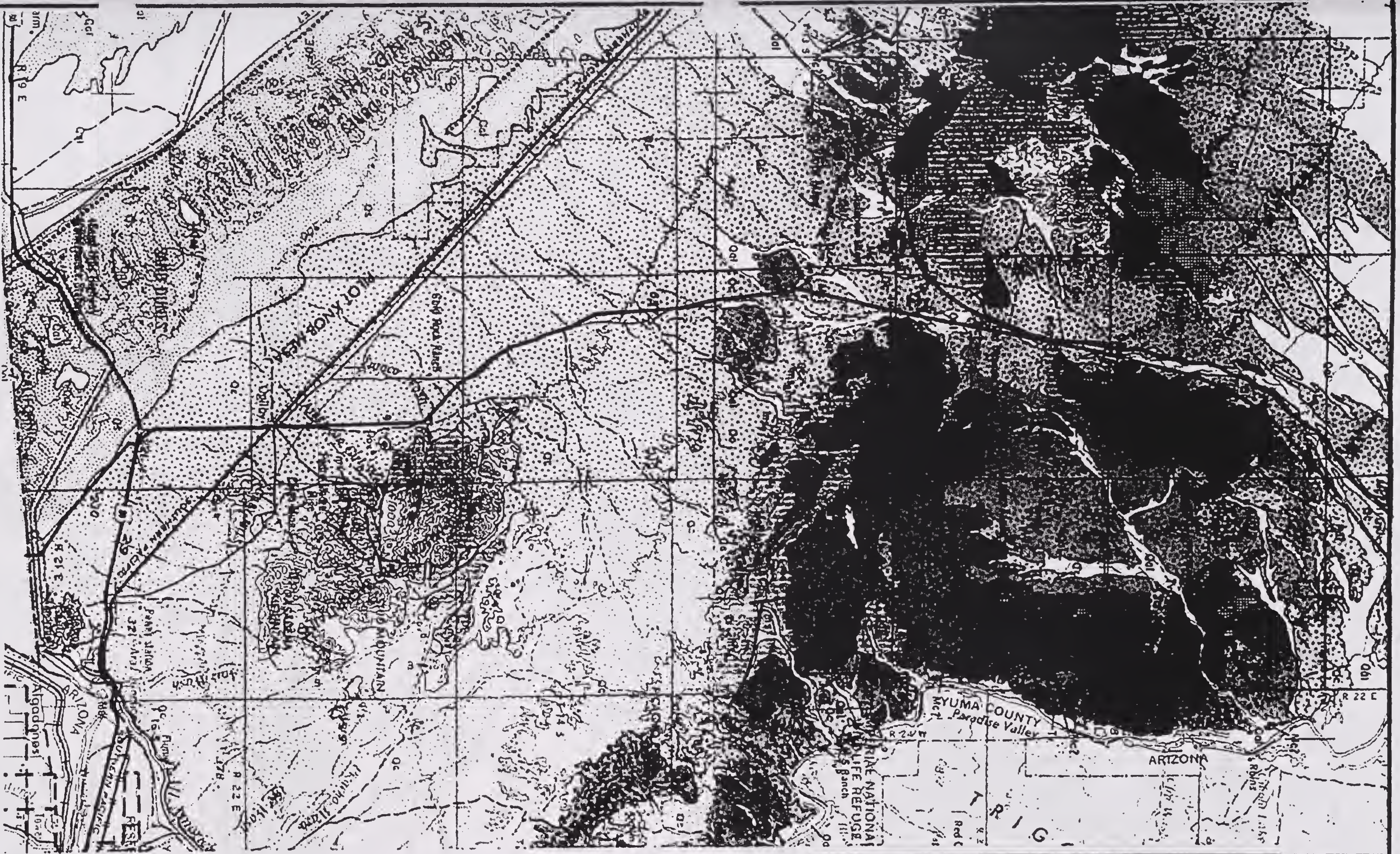
N

Figure 3 - Geologic Map, North Half

North Baja Pipeline Project

File No.: 08312-03

Earth Systems Southwest



Reference: *Geologic Map of California, Salton Sea & San Diego-El Centro Sheets (1967 & 1962)*

North Baja Pipeline Route

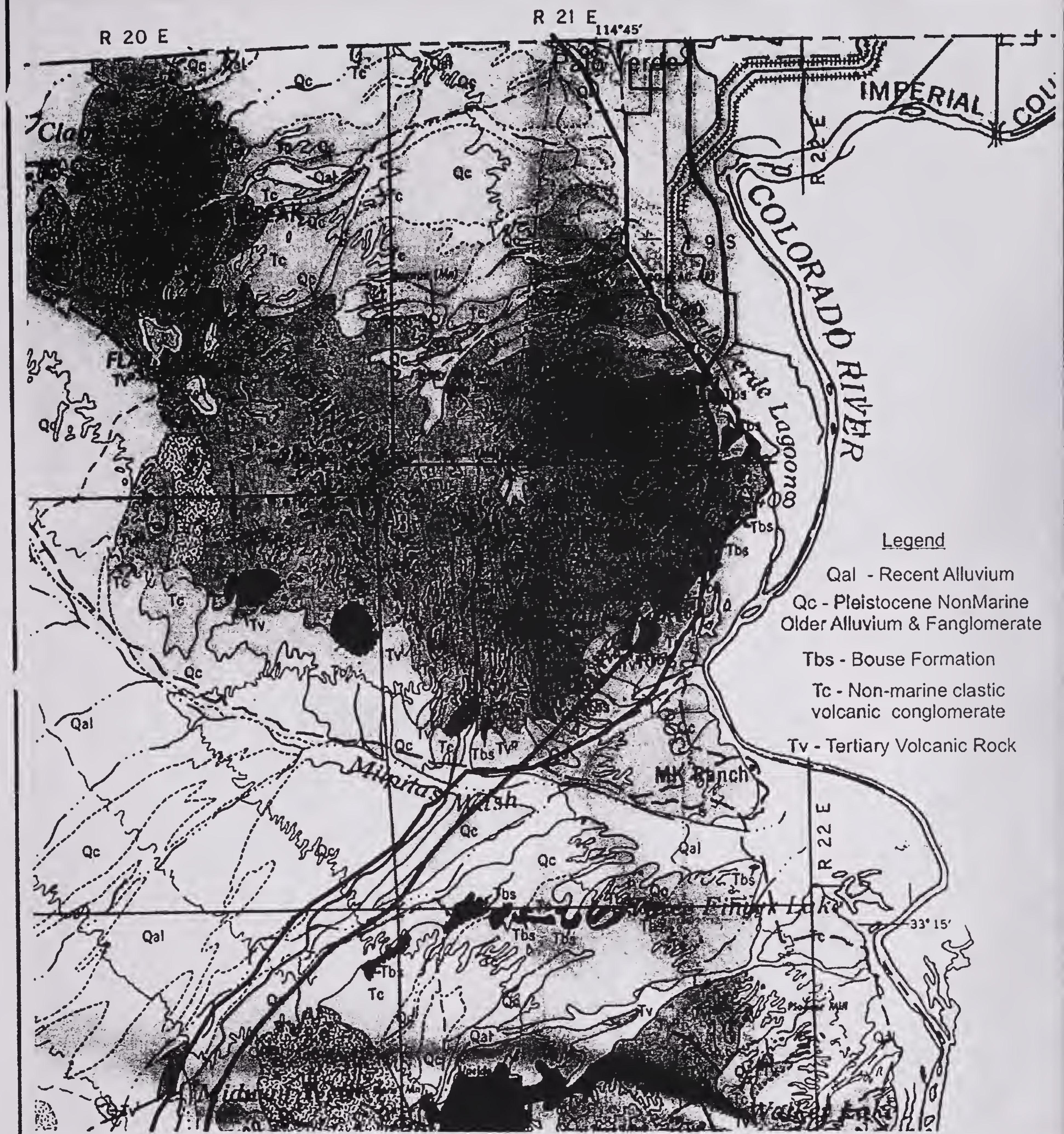
Scale: 1" = 4 miles (1:250,000)

0 4 8

Figure 4 - Geologic Map, South Half

North Baja Pipeline Project
File No.: 08312-03

Earth Systems Southwest



Reference: Geologic Map of Imperial County, CDMG Special Report No 7

North Baja Pipeline Route

Scale: 1" = 2 miles (1:125,000)

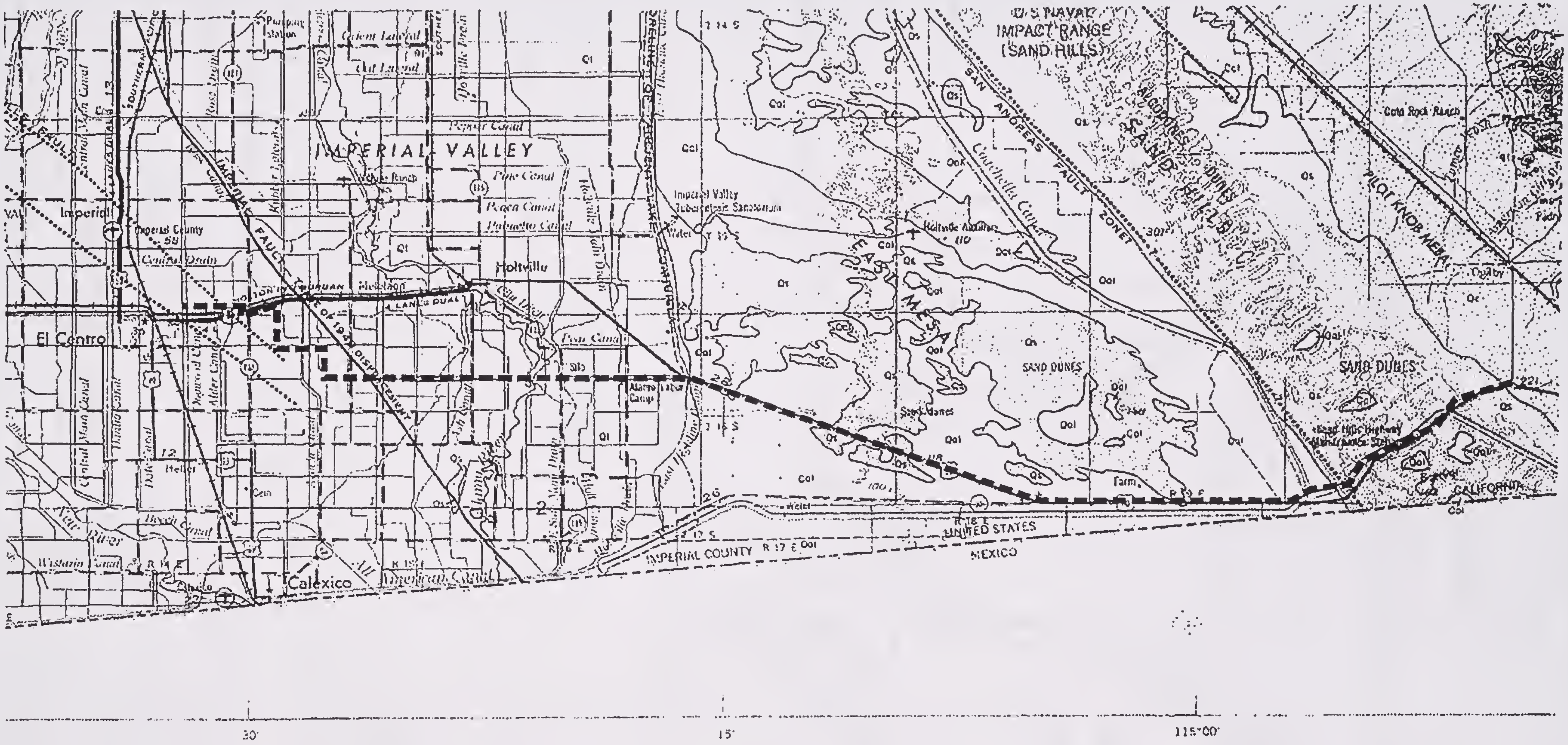
0 2 4

N

Figure 5 - Geology Map, Palo Verde Peak

North Baja Pipeline Project
File No.: 08312-03

Earth Systems
Southwest



Reference: *Geologic Map of California, San Diego-El Centro Sheet (1962)*

IID Lateral (preferred route)

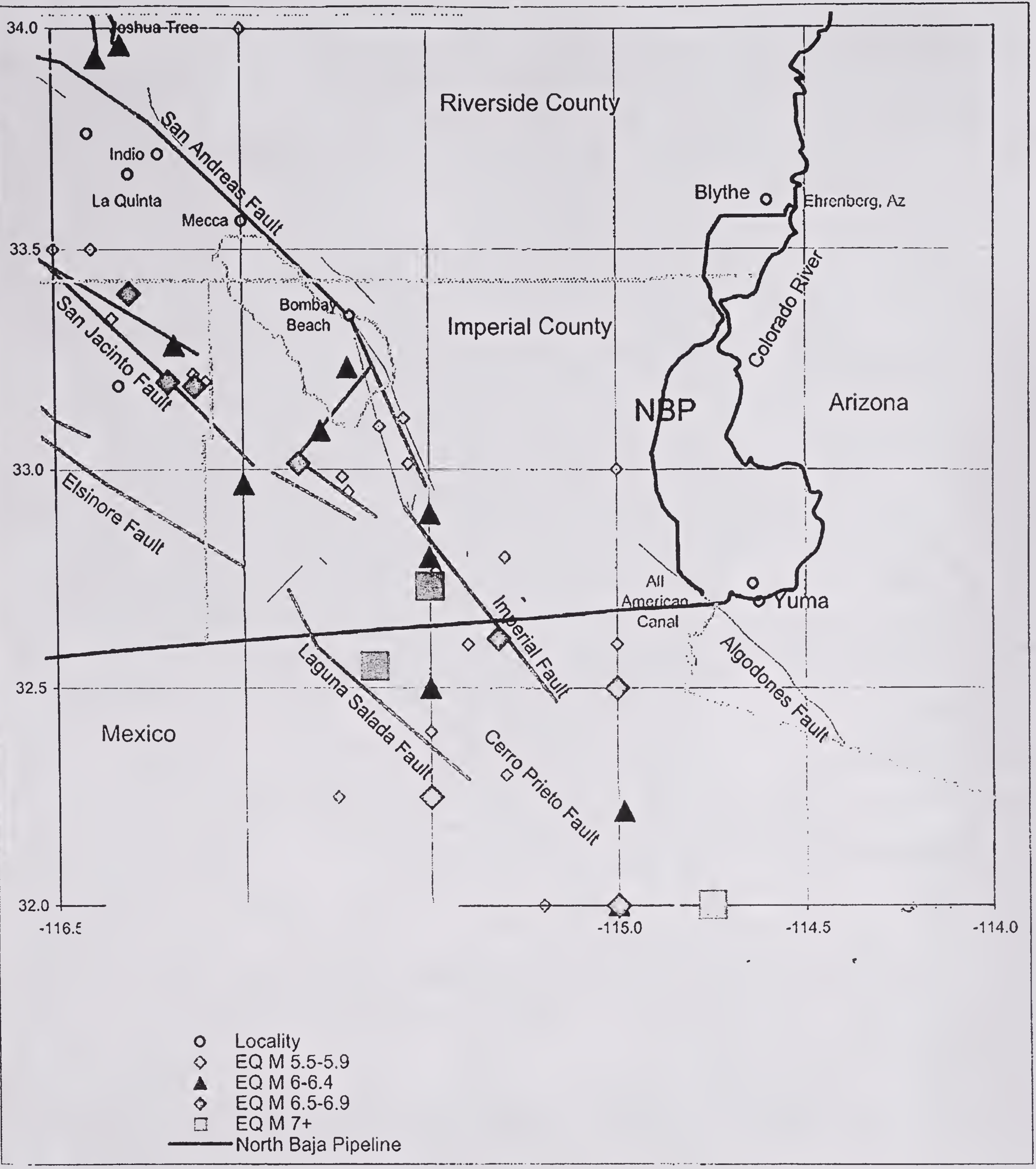
Scale: 1" = 5 miles

N

Figure 6 - Geologic Map
IID Lateral

North Baja Pipeline Project
File No.: 08312-03

Earth Systems
Southwest



Historic Earthquakes of
Magnitude 5.5 or greater are
plotted since 1800

Figure 7 - Regional Fault Map

North Baja Pipeline Project
File No.: 08312-03

Earth Systems
Southwest

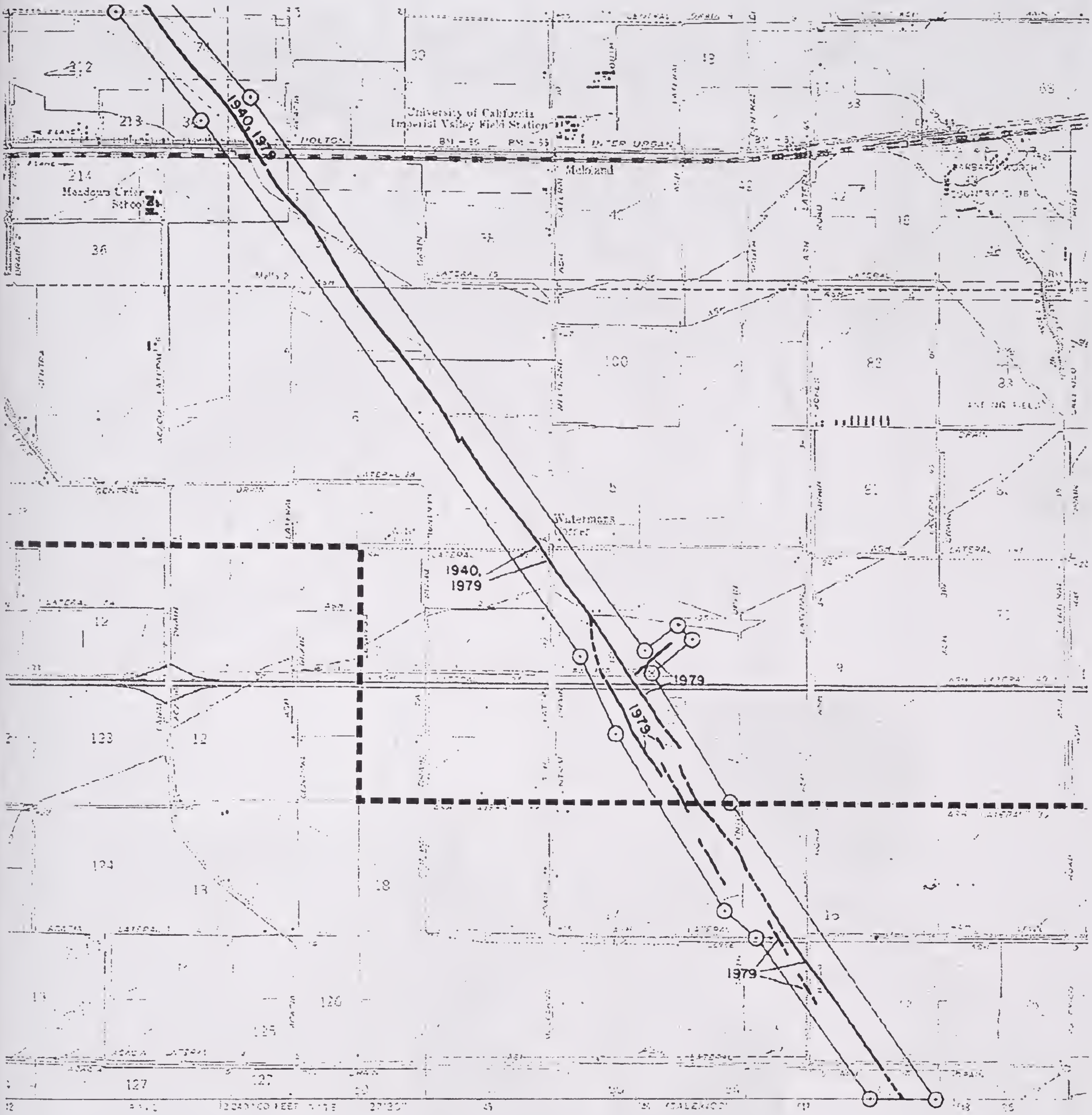


Figure 8 - Excerpt of A-P Fault Map at Imperial Fault

North Baja Pipeline Project
File No.: 08312-03

Earth Systems
Southwest

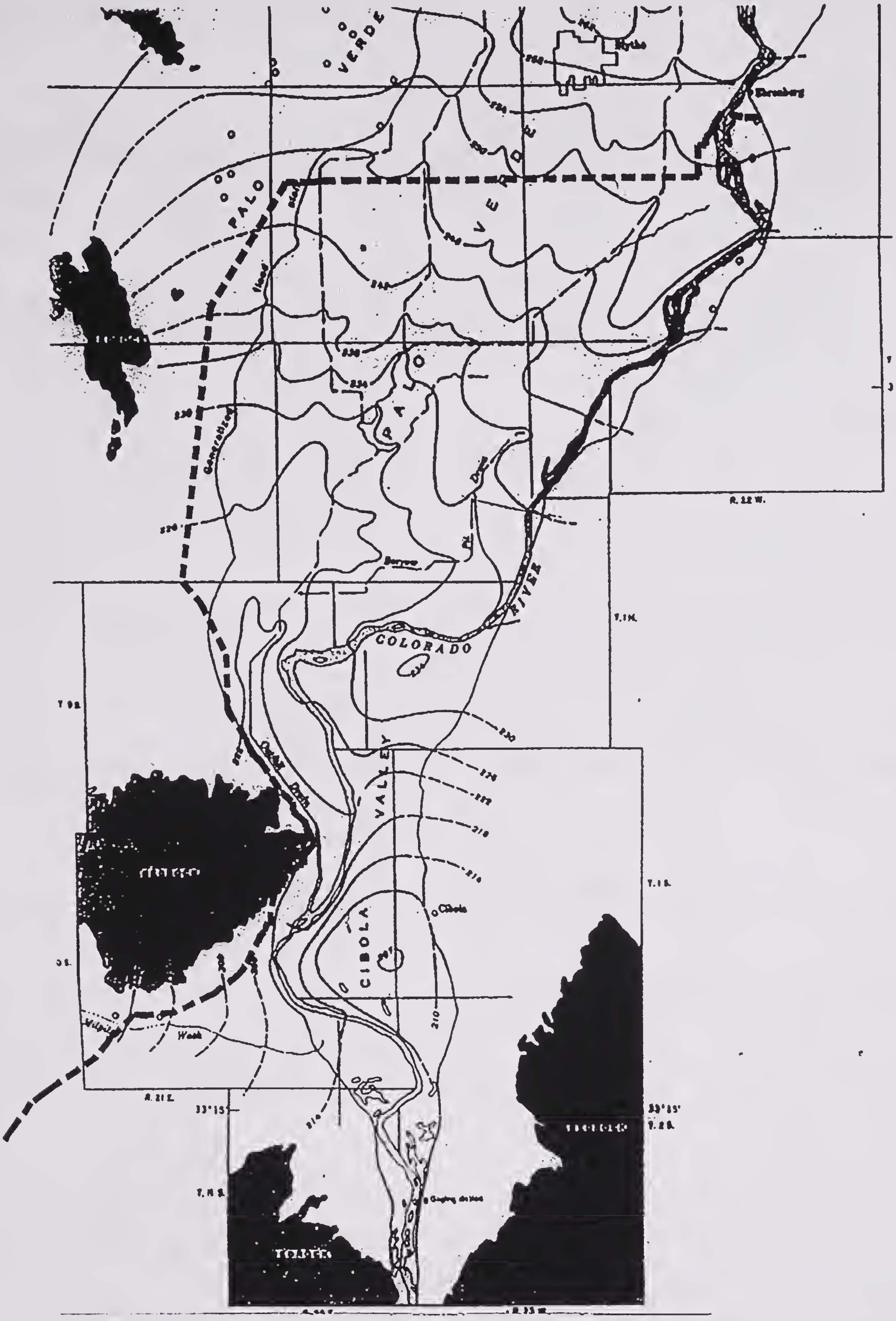
Reference:

- - - - IID Lateral (preferred route)

Scale: 1" = 3,000'

0 3,000 6,000

N



Reference: *USGS Professional Paper 486G*

North Baja Pipeline Route

Scale: 1" = 4 miles (1:250,000)

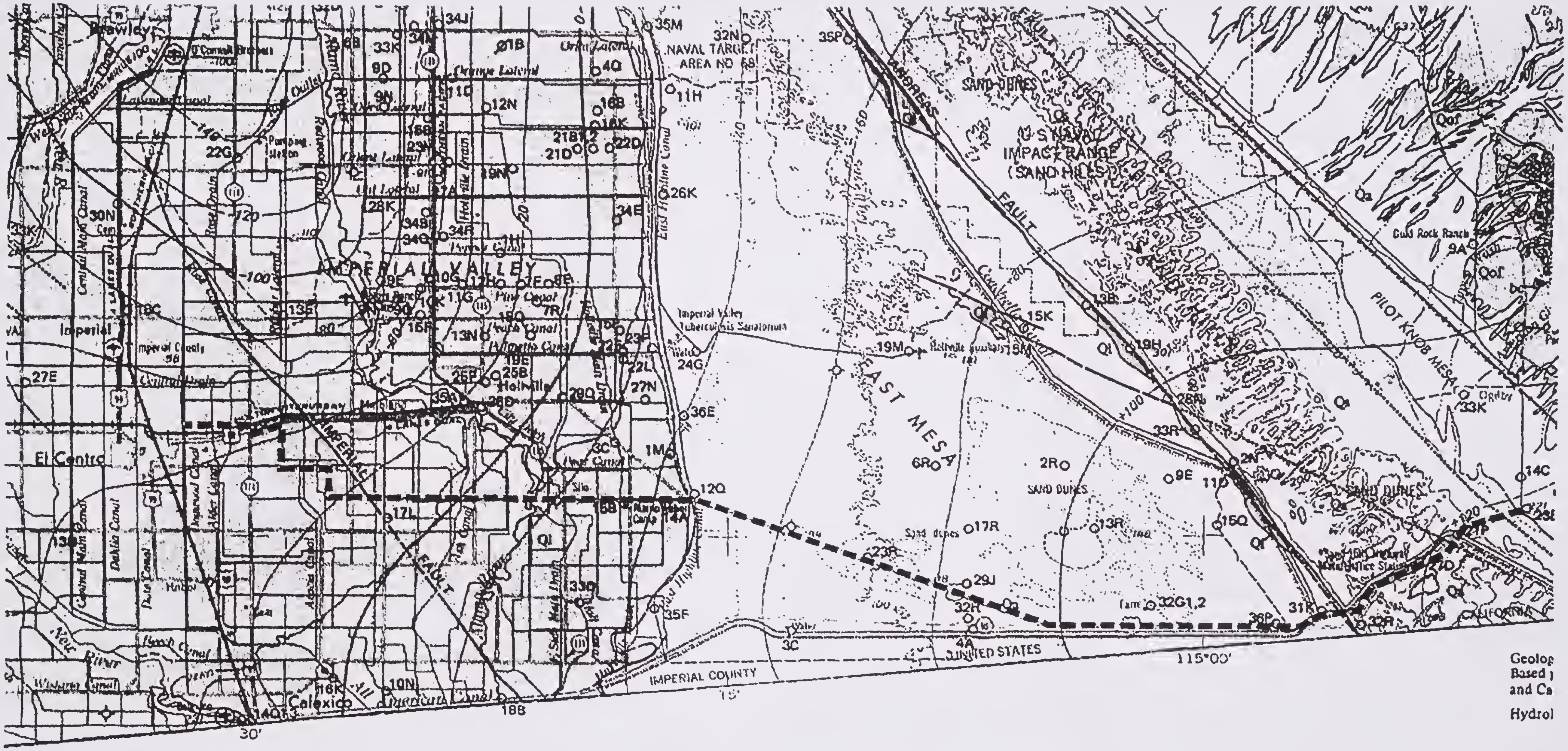
0 4 8

N

Figure 9 - Groundwater Levels, Palo Verde Valley Area

North Baja Pipeline Project
File No.: 08312-03

Earth Systems
Southwest



Reference: USGS Professional Paper 486-K
1965 Groundwater Level Contours in Blue

IID Lateral (preferred route)

Scale: 1" = 5 miles

N

Figure 10 - Groundwater Levels, IID Lateral

North Baja Pipeline Project
File No.: 08312-03

Earth Systems
Southwest

APPENDIX K

PALEONTOLOGICAL RESOURCE MITIGATION AND MONITORING PLAN

TransCanada
In business to deliver

North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix K

Paleontological Resource Mitigation and Monitoring Plan

Prepared by

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February 2006

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Appendix K

Paleontological Resource Mitigation and Monitoring Plan

1.0 INTRODUCTION

North Baja Pipeline, LLC (North Baja), will construct the North Baja Pipeline Expansion Project (Project), a new natural gas pipeline from the U.S.-Mexico border to the existing North Baja facilities and the El Paso Natural Gas system in Ehrenberg, Arizona. The Project includes four elements: the B-Line, which includes a metering station and interconnection facilities in Ehrenberg and in Blythe, California, as well as a 79.8-mile, 42- and 48-inch-diameter pipeline between Blythe and the Mexican border; the Blythe Energy Interconnect (BEI) Lateral, a 0.6-mile, 10-inch-diameter pipeline that connects the Blythe Meter Station to the existing supply pipeline for the Blythe Energy Facility I; the short (less than 0.1 mile) 36-inch-diameter SoCal Gas Interconnect, and the Imperial Irrigation District (IID) Lateral, a 45.7-mile, 16-inch-diameter pipeline between North Baja's mainline and the IID El Centro Generating Station. The Project will be constructed in phases, with the first phase planned for construction in 2007, the IID Lateral for 2008, and the final phase of the Project in 2009, pending completion of upstream liquefied natural gas (LNG) terminal facilities.

This Paleontological Resources Mitigation and Monitoring Plan (PRMM Plan or Plan) fulfills the requirements of the Federal Energy Regulatory Commission (FERC) and California Environmental Quality Act (CEQA) for an assessment of the potential impact on paleontological resources (fossils) of construction of the Project. A similar plan was prepared and implemented for construction of the A-Line in 2002. This Plan summarizes the findings of the assessment contained in Resource Report 6 and the mitigation and monitoring measures planned to mitigate the potential adverse impacts of Project construction on paleontological resources. The Plan includes avoidance strategies, mitigation measures including procedures for scientific removal of significant fossils, preparation/curation protocols, and provisions for a final report on the paleontological data recovery.

2.0 GUIDANCE MITIGATION CRITERIA: SOCIETY OF VERTEBRATE PALEONTOLOGY RECOMMENDATIONS

Guidelines of the Society of Vertebrate Paleontology (SVP) are found in *Standard Measures for Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontological Resources* (SVP 1991, 1995, 1996), and have been adapted to evaluate the paleontological resources and potential adverse impacts of the Project, and to help formulate an appropriate mitigation plan to protect those resources considered scientifically important. The SVP standard measures address significance and sensitivity of paleontological resources and methods for mitigating adverse effects on fossil resources, including guidance pertaining to field assessment, monitoring, identification, storage, and compliance.

3.0 RESOURCE ASSESSMENT

3.1 LITERATURE AND MUSEUM ARCHIVAL REVIEWS

Prior to construction of the A-Line, paleontological literature and museum archival reviews for previously recorded fossil sites in the vicinity of the A-Line and a field reconnaissance were undertaken. All known geological and paleontological literature was reviewed for references to fossils. In addition, museum archival reviews were conducted at the University of California Museum of Paleontology (UCMP) at Berkeley, the San Diego Natural History Museum (SDNHM) at San Diego, and the San Bernardino County Museum (SBCM) in San Bernardino. The UCMP at Berkeley is considered the primary repository for fossils in the State of California and the UCMP collections are considered the most comprehensive of all California institutions.

Detailed information on the stratigraphy of the area was obtained from numerous geological publications. The geology in the vicinity of the proposed right-of-way has been mapped or described by numerous workers, including Brown (1923), Strand (1962), Jennings (1967), Metzger *et al.* (1973), Loeltz *et al.* (1975), Morton (1977), and Stone (1990). This report is heavily dependent on Dibblee (1954), Metzger *et al.* (1973), and Morton (1977), who have provided the most comprehensive and detailed accounts.

3.2 FIELD SURVEY

The purpose of the field survey was to supplement the literature and museum archival reviews by verifying that sensitive rock units identified during these reviews occurred at the points previously mapped, to document the present condition of any previously recorded fossil sites, to look for any previously unrecorded fossils sites, and to identify areas where any special mitigation measures might need to be implemented prior to construction to avoid potential construction delays. Prior to construction of the A-Line, a field survey of the pipeline right-of-way was conducted during September 2000. Field monitoring took place in accordance with the PRMMP in effect for the A-Line construction in 2002. Paleontological discoveries along the A-Line in 2002 are listed in Table K-1. The IID Lateral route was field surveyed in November 2005.

Table K-1: Paleontological Discoveries Along the A-Line in 2002

Milepost	Results of Paleontological Monitoring	Significant Paleontological Find
25.7	Unidentified Holocene specimen (bone fragment)	No
27.2	Corals and calcareous algae in Bouse limestone	No
27.7-28.1	Turritelidae fossils, brachiopods, ostracods, foraminifera amphistegina, echinoids, and algae	No
27.7-28.8	Slabs of chert hosting marine invertebrates	No
27.9	Large fossil log in Bouse Formation limestone spoil pile	No
28.1	Slabs of Bouse Formation limestone hosting kummel form echinoids	No
28.1-28.2	Echinoid (sea urchin) fossils of probably Miocene age (14 to 15 million years before present [mybp])	Yes
28.1-28.2	Small echinoid crowns, barnacles plates, and shark teeth	No
28.6	Chert/limestone pebbles; crinoids, corals, bryozoans, and sand shark teeth	No
28.5-29.0	Brachiopod in Bouse Formation	No
29.1	Paleozoic brachiopod	No
33.1	Petrified wood specimen	No
33.2	Paleozoic fossiliferous crinoidal limestone	No
32.1-35.0	Limestone nodule with Paleozoic fossil corrals	No
41.5	Two petrified wood specimens in Pleistocene older alluvium	No
45.2-45.8	Marine fossils in carbonate pod (coral, bryozoa, crinoid ossicles)	No

3.3 ASSESSMENT OF POTENTIAL IMPACTS ON PALEONTOLOGICAL RESOURCES

Construction of the Project could result in either adverse or beneficial impacts on significant paleontological resources. Adverse impacts may occur when Project earth-moving and ground disturbance result in significant fossils being destroyed. The destruction of significant paleontological resources could occur either directly by mechanical means or indirectly by allowing weathering agents to reach previously buried specimens. Mechanical destruction could result not only from actual trenching, but also from excavations during construction of access roads, clearing, and grading. Indirect adverse impacts could occur whenever weathering agents are allowed to reach specimens previously naturally protected by burial. For instance, indirect impacts could occur from any ground disturbance that causes fracturing of the ground, allowing the percolation of rain water through the disturbed sediment. Additionally, indirect impacts could result from any changes in surface grade that modifies the drainage pattern and allows erosion of previously protected areas; increased erosion could expose previously protected fossils to weathering and destruction.

Based on the literature and museum archival review, field survey, and A-Line construction monitoring, the paleontological sensitivity for stratigraphic units crossed by the proposed pipeline routes was determined. The potential for fossils based on paleontological sensitivity along the proposed pipeline route is summarized by milepost in Table K-2.

Table K-2: Paleontological Sensitivity of Stratigraphic Units Found Along the North Baja Pipeline Expansion Project

Mileposts	Stratigraphic Unit	Potential for Fossils
B-Line		
0.0 – 11.5	Holocene alluvium	low sensitivity
11.5 – 22.3	Pleistocene older alluvium	moderate sensitivity
22.3 – 25.2	Holocene alluvium	low sensitivity
25.2 – 25.8	Pleistocene older alluvium	moderate sensitivity
25.8 – 26.0	Holocene alluvium	low sensitivity
26.0 – 26.6	Miocene fanglomerate	low sensitivity
26.6 – 27.0	Holocene alluvium	low sensitivity
27.0 – 27.3	Miocene fanglomerate	low sensitivity
27.3 – 27.6	Holocene alluvium	low sensitivity
27.6 – 28.2	Pliocene Bouse Formation	moderate sensitivity
28.2 – 28.5	Holocene alluvium	low sensitivity
28.5 – 29.2	Pliocene Bouse Formation	moderate sensitivity
29.2 – 29.9	Early Tertiary volcanic rocks	low sensitivity
29.9 – 30.2	Pliocene Bouse Formation	moderate sensitivity
30.2 – 31.2	Early Tertiary volcanic rocks	low sensitivity
31.2 – 31.6	Pliocene Bouse Formation	moderate sensitivity
31.6 – 32.6	Miocene fanglomerate	low sensitivity
32.6 – 32.8	Holocene alluvium	low sensitivity
32.8 – 35.8	Miocene fanglomerate	low sensitivity
35.8 – 36.3	Holocene alluvium	low sensitivity
36.3 – 75.2	Pleistocene older alluvium	moderate sensitivity
75.2 – 79.8	Holocene alluvium	low sensitivity
BEI Lateral		
0.0 – 0.5	Holocene alluvium	low sensitivity
SoCal Gas Interconnect		
NA	Holocene alluvium	low sensitivity
IID Lateral		
0.0 – 2.0	Pleistocene alluvium	low sensitivity
2.0 – 7.6	Dune sands	low sensitivity
7.6 – 27.6	Quaternary alluvium	low sensitivity
27.6 – 45.7	Quaternary Lacustrine sands	Low-moderate sensitivity

The results of literature and field review, and monitoring during the construction of the A-Line revealed very limited paleontological resources. Of the several areas identified during pre-construction analysis as moderate sensitivity along the A-Line, only a short stretch of about a mile, from MP 28.1 to MP 29.1, yielded a single significant paleontological find. Areas of Pleistocene older alluvium, potentially of moderate sensitivity and identified from MP 11.5 to MP 22.3, yielded no paleontological materials. Other areas of Pleistocene older alluvium, including MPs 35-75.2, yielded only occasional paleontological materials and no significant finds. The BEI Lateral and SoCal Gas Interconnection Pipeline are both located in the same Holocene alluvium stratigraphic unit as the first 11.5 miles of the B-Line. The four stratigraphic units crossed by the IID Lateral have a low to low-moderate potential to yield paleontological resources, and the construction of the IID Lateral is unlikely to affect such resources.

Implementation of a paleontological resource mitigation plan prepared by a knowledgeable and experienced paleontologist can result in a substantial reduction in the severity of adverse construction-related impacts, both direct and indirect. A well-designed and fully implemented mitigation program can even provide some beneficial impacts by uncovering and recording information about or preserving significant fossils and associated geologic and geographic data in a public museum where they are available for future study by qualified investigators.

4.0 MITIGATION AND MONITORING

The purpose of the PRMMP is to assist North Baja in complying with environmental laws and permit requirements regarding the protection of significant paleontological resources that might be encountered during Project construction. The goal of the proposed program is to minimize the potential negative effects of Project construction to a point where no significant effect on paleontological resources will occur.

4.1 PROJECT-WIDE MEASURES

Construction of the Project will involve several known fossil-bearing rock units. However, the paleontological sensitivity of stratigraphic units crossed is low overall, taking into account literature, field review, and monitoring during the construction of the A-Line. Due to the widespread geographic distribution of these geological formations, a paleontological resource mitigation program has been developed. This mitigation program includes construction-worker education and spot monitoring of selected sections of the pipeline right-of-way during excavation to salvage any significant fossil remains encountered during construction involving ground-disturbing and earth-moving activities.

More specifically, the paleontological resource mitigation program includes the following:

Avoidance Strategy

1. All construction personnel will be given environmental training that will include instruction in both verbal and written form regarding what fossil resources may be encountered during construction. The Environmental Inspectors will receive additional instruction in fossil identification from the Project Paleontologist.
2. Construction personnel will be instructed that, if fossils are seen in areas without a Paleontological Monitor, the Environmental Inspector and the Project Paleontologist will immediately be notified, and the fossils will be avoided by further construction activities until a determination of the significance of the discovery can be made and a plan of action can be formulated.
3. Construction personnel will also be instructed that excavation spoils surrounded by exclusion fencing or survey flagging are to be avoided under all circumstances, and that any intrusions into an exclusion zone by personnel or equipment other than under the direction of the Project Paleontologist are strictly prohibited.
4. If the Paleontological Monitor or Environmental Inspector note an unusually large number of fossils or an individual highly significant specimen being excavated or disturbed by earth-moving operations, he or she will immediately contact the Project Paleontologist. The Environmental Inspector may temporarily halt construction activities until consultation with the Project Paleontologist and (on Federal lands) BLM staff to determine whether site-specific mitigation requirements are warranted.

5. Depending on the specific circumstances, the mitigation procedure could either: move construction away from the fossil locality and return later to carefully excavate the fossil site under the direction of the Project Paleontologist; or excavate through the fossil site, destroying a portion of the site, and salvaging a representative collection of significant fossils from an adjoining portion of the site.

Other General Mitigation Measures

1. A Paleontologist Monitor or Environmental Inspector will spot monitor ground-disturbing activities along those sections of the pipeline right-of-way identified during the literature/archival reviews and field survey as having a moderate potential for paleontological resources (see Section 4.2). During excavation in stratigraphic units with fossil-bearing potential, the Paleontologist Monitor or Environmental Inspector will monitor trenching activities and examine freshly exposed surfaces during clearing and grading operations. The Paleontologist Monitor or Environmental Inspector will salvage significant fossils exposed during construction after consultation with the Project Paleontologist.
2. Each significant salvaged fossil will be preliminarily identified to the lowest taxon possible by the Project Paleontologist before curation into the retrievable storage system. Specimens preserved in rock matrix will be prepared only sufficiently to provide a taxonomic identification.
3. During Project construction, the Paleontological Monitor or Environmental Inspector will prepare reports that will be summarized by the Project Paleontologist into a brief quarterly report to be submitted to the FERC, CSLC, and BLM. In these quarterly status reports, the Project Paleontologist will briefly describe the results of the paleontological resource mitigation program during that quarter.
4. During construction, if no fossil remains have been discovered after one-half of the excavations through any individual stratigraphic unit have been completed, upon the recommendation of the Project Paleontologist monitoring in that stratigraphic unit may be reduced or suspended entirely.
5. At the end of the Project, the Project Paleontologist will prepare a final report of findings that lists and places in a scientific perspective all significant salvaged materials.

Implementation of the mitigation measures described above will ensure protection of significant paleontological resources and result in compliance with Federal and State environmental guidelines.

4.2 SITE-SPECIFIC MITIGATION MEASURES

4.2.1 B-Line

Results of the paleontological monitoring conducted during the construction of the A-Line in 2002 are summarized in Table K-1. Based on the archival research and monitoring undertaken during the construction of the A-Line, monitoring of B-Line construction by a paleontologist is planned only through MPs 27 to 29, where the outer edge of the Bouse Formation is crossed.

4.2.2 IID Lateral

Based on low sensitivity of the stratigraphic units crossed by the IID Lateral, spot monitoring is planned. Between MP 27.6 to MP 46, spot monitoring recommended unless excavation unearths coarse beach intervals or thicker sand/gravel lenses. In the latter event, probability for fossils rises to high in those intervals and continuous monitoring is recommended.

5.0 FOSSIL EXTRACTION

The overall probability of discovery of salvageable fossils is at best only moderate in even the most promising intervals of this proposed right-of-way. If salvageable fossils are encountered, they would most likely be individual separate (disarticulated) bones of larger mammals such as elephants or other hoofed taxa like horses or bison. Predators, because of their inherent low frequency in any environment, are very unlikely.

Owing to the virtually unconsolidated nature of nearly all intervals of the multiple stratigraphic units along the right-of-way, the extraction of any fossil remains here would be a relatively simple and rapid process. Extraction and removal of individual post cranial skeletal bone elements might even be effected without having to resort to the use of plaster field jackets. Skulls, particularly those of larger ungulates, would probably require plaster jackets but the tedium and time-consuming process of exposing, undercutting, and removal of the fossils is greatly eased by the unconsolidated nature of the sediments.

6.0 CURATION AND REPORTING

6.1 PROTOCOL FOR CURATION/REPOSITORY STORAGE OF FOSSILS

Fossils encountered and judged salvageable by the Project Paleontologist along the Project route will be removed, stabilized, and accessed into museum collections. Museums in the vicinity of the right-of-way, including the University of California's Museum of Paleontology at Berkeley, Los Angeles County Museum, Anza Borrego Museum, San Diego Museum of Natural History and the San Bernardino County Museum all maintain collections of fossils that would be similar to those likely to be found on the Project. Contacts with museum personnel from these establishments suggest they would be willing to examine a suite of fossils salvaged and select any materials they wished to access into their collections.

Field collection is to follow standard strategies including, where necessary for vertebrate materials, plaster jackets. Materials are to be cleaned and stabilized only to the degree necessary for removal from the field and transport. Curation, including identification to generic or where possible specific levels, will proceed when materials arrive at the laboratory. Facilities for fossil preparation/curation are available at the Condon Museum, which is the Oregon State Museum of Paleontology, and that laboratory will be utilized for the initial stabilization and preparation of fossils.

At all these facilities the fossils will be available for study, teaching, research, or display to the scientific community as well as the public at large. Disposition of all fossils, including repository specimen numbers, will be part of the final report.

6.2 FINAL REPORT

Upon completion of the work, the Project Paleontologist will prepare a final paleontology report. The report will include a complete faunal and floral list of all taxa recovered and salvaged as well as museum collection accession numbers on all fossil objects and their final disposition (storage). The report will also include a summary narrative on the scientific import, which will address both the entire collection as well as specific specimens, depending on their significance.

This report will include, as prescribed by the SVP (1991, 1995, and 1996), a summary of the stratigraphy and lithology of fossil-bearing strata, taxonomic lists of plant and animal specimens noted and salvaged along the right-of-way and their scientific significance, and complete detailed records of the localities when collection took place (SVP 1991, 1995, 1996). In addition, the ultimate repository in California for each salvaged fossil along with the museum accession number will be recorded in addition to its identification to the lowest taxonomic level (genus and/or species) following stabilization and preparation to a sufficient degree that such identification might be made. A complete bibliography of pertinent papers on the taxa identified will be part of this report. The final report will be distributed to the FERC, CSLC, BLM, BOR, Cibola National Wildlife Refuge (NWR), and other interested parties.

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APPENDIX L

DUST CONTROL PLAN

TransCanada
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North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix L
Dust Control Plan

Prepared by

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February 2006

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Appendix L

Dust Control Plan

1.0 INTRODUCTION

North Baja Pipeline, LLC (North Baja), will construct the North Baja Pipeline Expansion Project (Project), a new natural gas pipeline from the U.S.-Mexico border to the existing North Baja facilities and the El Paso Natural Gas system in Ehrenberg, Arizona. The Project includes four elements: the B-Line, which includes a metering station and interconnection facilities in Ehrenberg and in Blythe, California, as well as a 79.8-mile, 42- and 48-inch-diameter pipeline between Blythe and the Mexican border; the Blythe Energy Interconnect (BEI) Lateral, a 0.6-mile, 10-inch-diameter pipeline that connects the Blythe Meter Station to the existing supply pipeline for the Blythe Energy Facility I; the short (less than 0.1 mile) 36-inch-diameter SoCal Gas Interconnect; and the Imperial Irrigation District (IID) Lateral, a 45.7-mile, 16-inch-diameter pipeline between North Baja's mainline and the IID El Centro Generating Station. The Project will be constructed in phases, with the first phase planned for construction in 2007, the IID Lateral for 2008, and the final phase of the Project in 2009, pending completion of upstream liquefied natural gas (LNG) terminal facilities.

Construction of the proposed facilities will result in fugitive dust. Fugitive dust is particulate matter that is suspended in the air by wind or human activities and does not come from a point source such as a stack. Air quality regulations require the use of control techniques to minimize fugitive dust emissions. The goal is to eliminate visible airborne fugitive dust to the extent possible, given the construction techniques and requirements. This plan is designed to reduce fugitive dust emissions to a minimum from the Project.

There are several reasons to control fugitive dust. First, Imperial County is not currently in compliance with the U.S. Environmental Policy Act (EPA) Clean Air standards with regards to particulate matter under 10 microns or under 2.5 microns (abbreviated PM_{10} and $PM_{2.5}$, respectively) (http://www.epa.gov/airtrends). Thus it is important that this Project not worsen the existing situation. Second, fugitive dust can cause respiratory distress, not only in the construction workers and nearby residents, but also in nearby wildlife. Fugitive dust can obscure visibility to the point of creating a safety hazard. Finally, fugitive dust can be evidence of soil loss through wind erosion. Fugitive dust can be created directly from the activities involved in pipeline construction, such as vegetation removal, grading, trenching, backfill, or topsoil replacement. Vehicles and equipment moving rapidly on unsurfaced roads and work areas can also create dust, while significant wind action on spoil piles or topsoil storage areas is yet another source of dust.

2.0 FUGITIVE DUST SOURCES ON THE NORTH BAJA PIPELINE EXPANSION PROJECT

Fugitive dust can be created directly from the activities involved in pipeline construction such as vegetation removal, grading, trenching, backfill, or topsoil replacement. Vehicles and equipment moving rapidly on unsurfaced roads and work areas can also create dust, while significant wind action on unprotected spoil piles or topsoil storage areas is yet another source of dust. These activities consist of a series of different operations, each with its own duration and potential for dust generation. In other words, emissions from any single construction site can be expected 1) to have a definable beginning and an end, and 2) to vary substantially over different phases of the construction process. This is in contrast to most other fugitive dust sources, where emissions are either relatively steady or follow a discernable annual cycle.

This dust control plan applies only to fugitive dust generated by construction activities and vehicle trips by support equipment on unpaved roads. These sources are evaluated in the Resource Report 9. Energy use, architectural coatings, and traffic impacts were not quantified because their impacts are not pertinent to, nor subject to, dust control measures. No demolition is required as part of this Project.

3.0 APPLICABLE RULES

Pipeline construction will occur in Imperial and Riverside counties, California, and La Paz County, Arizona. The agencies responsible for air quality activities in these counties are:

- Imperial County Air Pollution Control District (ICAPCD)
- Mojave Desert Air Quality Management District (MDAQMD)
- Arizona Department of Environmental Quality (ADEQ)

Permits are not required for pipeline and related aboveground facility construction emissions from any of the above noted agencies. However, there are applicable best management practices that apply to construction emissions identified by the responsible local air quality control agency. Table L-1 lists agency rules.

Table L-1: Fugitive Dust Rules

Agency	Rule Number	Rule Description
ADEQ La Paz County, AZ	R18-2-604	Construction fugitive dust limitations
	R18-2-605	Road construction fugitive dust limitations
	R18-2-606	Material handling fugitive dust limitations
	R18-02-607	Storage pile fugitive dust limitations
	R18-2-702	Visible emission limitations
	R18-2-802	Off-road machinery opacity limitations
	R18-2-804	Roadway and site clearing opacity limitations
MDAQMD Riverside County, CA	401	Visible emission limitations
	402	Nuisance
	403	Fugitive dust control
IAPCD Imperial County, CA	401	Visible emission limitations
	407	Nuisance
	800-805	Fugitive dust control rules

4.0 DUST CONTROL MEASURES IDENTIFIED BY RULES

Impacts from fugitive dust would be controlled by applying the appropriate control measures (*e.g.,* watering unpaved roads, covering piles, etc) as identified by each air quality control agency having jurisdiction over the construction areas. The following describes dust control measures proposed by North Baja based on the best management practices identified by agencies:

- Take every reasonable precaution to minimize fugitive dust emissions from construction activities.
- Take every reasonable measure to limit visible density (opacity) of emissions (VDE) to less than or equal to 20 percent.
- Apply water one or more times per day to all affected unpaved roads, and unpaved haul and access roads.
- Reduce vehicle speeds on all unpaved roads, and unpaved haul and access roads.
- Clean up track-out and/or carry-out areas at paved road access points at a minimum of once every 48 hours.
- If bulk transfer operations are required, spray handling and transfer points with water at least 15 minutes before use.
- Cover all haul truck loads, or maintain at least 6 inches of freeboard space in each cargo compartment. Insure that all haul truck cargo compartments are constructed and maintained to minimize spillage and loss of materials, and clean or wash each cargo compartment at the delivery site after removal of the bulk materials.
- Apply water to active construction areas to limit VDE to less than or equal to 20 percent.
- Apply water to open and/or unvegetated areas to limit VDE to less than or equal to 20 percent.
- For temporary surfaces during periods of inactivity, restrict vehicular access by means of either fencing or signage, and apply water to comply with the stabilized surface requirements.

5.0 ADDITIONAL DUST CONTROL MEASURES

5.1 USE OF TACKIFIERS

Use of tackifiers will be limited to spoil and topsoil piles. During construction of the A-Line in 2002, several types of tackifiers and several methods of applying tackifiers were tried with generally unsatisfactory results. Tackifiers were found to work on spoil piles or other locations with no traffic or subsequent disturbance. In areas with repeated vehicle use, however, they were ineffective. To be effective, tackifiers required a compact soil surface, sufficient moisture holding capabilities (*e.g.*, the presence of clays or organic matter), and/or soil structure (*i.e.*, the ionic bonding of soil particles into clods, or "peds"). These soil characteristics were found to be absent for much of the A-Line right-of way especially in desert areas. In many places along the right-of-way, removal of surficial soil exposed a dry, structureless, silty C-horizon. In these soils the individual mineral particles entirely lack adhesion, rendering them highly susceptible to wind erosion. Moreover, the depth, dryness, and poor moisture holding capability of the soils allow them to absorb large quantities of water or water-based compounds without compacting, puddling, or maintaining the particle adhesion necessary to inhibit wind erosion. Similar soil characteristics are found along the IID Lateral.

Additional measures proposed by North Baja related to fugitive dust control near residential and agricultural areas and highways, and cross-country construction are described in more detail below.

5.2 RESIDENTIAL AND AGRICULTURAL AREAS AND HIGHWAYS

The main objective of the fugitive dust control effort is to decrease dust emissions. In Imperial County, the objective is to reduce dust emissions below the ICAPCD limit of 20 percent opacity to comply with fugitive PM_{10} regulations in Rules 800 through 805 of the ICAPCD. Dust will be controlled so that impacts to adjacent residences are kept to a minimum at all times. Fugitive dust emissions in agricultural and residential areas will be controlled either by the application of water on the construction right-of-way and access roads, by water and tackifier on topsoil and spoil piles, speed control on exposed surface areas, and the mechanical covering of exposed piles with plastic or other wind-resistant covers.

Fugitive dust rules adopted and enforced by the Mojave Desert AQMD will apply to the portion of the construction route within Riverside County, *i.e.*, Rules 401 through 403. These rules are similar in scope and requirements as the ICAPCD rules noted above.

5.3 CROSS-COUNTRY CONSTRUCTION

Topsoil Piles – For spoils and topsoil piles, a single application of a tackifier (organic polymer) will be sufficient to control dust until these materials are re-applied to the work area. This compound will be applied once where soil conditions warrant after piles are created as a water-based additive from a spray truck.

Cleared Right-of-Way and Unpaved Access Roads – Water without tackifier will be applied as required to reduce dust. Vehicles may travel these areas immediately upon application of water. Given the temperature and humidity conditions present on the right-of-way, puddling of water, if it occurs at all, will be short term.

6.0 SAFETY MEASURES FOR DUSTY CONDITIONS DURING ROW CLEARING

In areas adjacent to highways where dust could cause poor visibility, grading activities will be restricted to prevent unsafe conditions. Restrictions may include applying water as close to earth-moving equipment as possible, slowing the speed of construction equipment, spacing equipment further apart, increased traffic control, or shutting down operations. North Baja will coordinate with the California Highway Patrol to ensure adequate traffic control measures are in place, including the possibility of using flaggers to control traffic if extreme low visibility conditions develop.

7.0 MONITORING AND RECORDKEEPING

Environmental Inspectors are primarily responsible for monitoring and enforcing the need for dust control. The contractor will implement dust control as specified above, and the Environmental Inspectors will be responsible for making sure that dust control is effective and recorded.

8.0 RESPONSIBLE CONTACT

The following individual(s) are responsible for the preparation, submittal, and implementation of this Dust Control Plan.

Name	Title	Company	Address	Phone
(Preparation)				
(Submittal)				
(Implementation)				

APPENDIX M

DRY WASHES CROSSED BY THE NORTH BAJA PIPELINE EXPANSION PROJECT

TABLE M-1

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
Wetlands														
WE-1	1	0.2	Colorado River	Directional Drill	7S 23E 2	Blythe	Perennial	250	None; avoid by directional drilling	None; avoid by directional drilling	tamarisk, willow, arrow weed	Riparian Wetland	Imperial Reservoir	Yes
WE-2	1	0.3	Colorado River	Directional Drill	7S 23E 2	Blythe	Perennial	50	None; avoid by directional drilling	None; avoid by directional drilling	wetland, tamarisk, willow, broad-leaved cattail, Bermuda grass, arrow weed	Riparian Wetland	Imperial Reservoir	Yes
WE-3	1	2.7	Borrow Pit Drain	Trench	7S 23E 10	Blythe	Perennial	70	0.04	0.1	flatsedge, barnyard grass, sprangle top	Wetland	Imperial Reservoir	Yes
WE-4	7	28.2	Unnamed Wetland	Trench	9S 21E 35	Cibola	Seasonal	360	0.2	0.7	tamarix, sarcobatus, allenrolfea	Sodic Seasonal Wetland	Imperial Reservoir	Yes
WE-5	7	28.3	Unnamed Wetland	Trench	9S 21E 35	Cibola	Seasonal	970	0.6	1.8	tamarix, sarcobatus, allenrolfea	Sodic Seasonal Wetland	Imperial Reservoir	Yes
WE-6	7	28.5	Unnamed Wetland	Trench	9S 21E 35	Cibola	Seasonal	515	0.3	1.0	tamarix, sarcobatus, allenrolfea	Sodic Seasonal Wetland	Imperial Reservoir	Yes
CWE-1	7	28.85	Unnamed Feature	Trench	9S 21E 36	Cibola	Seasonal	194	0.1	0.4	palustrine shrub-scrub, tamarisk, arrow weed	Sodic Seasonal Wetland	Imperial Reservoir	Yes
CWE-2	7	29.1	Unnamed Feature	Trench	9S 21E 36	Cibola	Seasonal	151	0.1	0.3	palustrine shrub-scrub, tamarisk, arrow weed, screwbean mesquite	Sodic Seasonal Wetland	Imperial Reservoir	Yes
CWE-3	7	29.2	Unnamed Feature	Trench	10S 21E 1 and 9S 21E 36	Cibola	Seasonal	287	0.2	0.5	palustrine shrub-scrub, tamarisk, iodine bush	Sodic Seasonal Wetland	Imperial Reservoir	Yes
CWE-4	7	29.7	Unnamed Feature	Trench	10S 21E 1 and 11	Cibola	Seasonal	9630	5.5	17.7	palustrine shrub-scrub, tamarisk, arrow weed, iodine bush	Sodic Seasonal Wetland	Imperial Reservoir	Yes
CWE-5	7	31.35	Unnamed Feature	Trench	10S 21E 11 and 14	Cibola	Seasonal	1483	0.9	2.7	palustrine shrub-scrub, tamarisk	Sodic Seasonal Wetland	Imperial Reservoir	Yes
WE-7	17	79.8	All-American Canal	Directional Drill	16S 21E 32	Grays Well NE	Perennial	15	None; avoided by directional drilling	None; avoided by directional drilling	giant reed	Riparian Wetland	Salton Sea & Lower Colorado	No
WE-8	17	79.9	All-American Canal	Directional Drill	16S 21E 32	Grays Well NE	Perennial	20	None; avoided by directional drilling	None; avoided by directional drilling	giant reed, bearded sprangle top	Riparian Wetland	Salton Sea & Lower Colorado	No
Waters														
W-1	1	0.2	Colorado River	Directional Drill	7S 23E 2	Blythe	Perennial	840	None; avoided by directional drilling	None; avoided by directional drilling	tamarisk, willow, arrow weed	Riparian	Imperial Reservoir	Yes
W-2	4	16.9	Unnamed Drainage	Trench	8S 21E 2	Roosevelt Mine	Seasonal	20	0.01	0.04	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-3	5	17.7	Unnamed Drainage	Trench	8S 21E 11	Roosevelt Mine	Seasonal	20	0.01	0.04	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-4	5	17.9	Unnamed Drainage	Trench	8S 21E 11	Thumb Peak	Seasonal	20	0.01	0.04	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-5	5	18.2	Unnamed Drainage	Trench	8S 21E 11	Thumb Peak	Seasonal	10	0.01	0.02	Poaceae sp., creosote	Creosote Bush Scrub	Imperial Reservoir	No
W-6	5	18.7	Unnamed Drainage	Trench	8S 21E 14	Thumb Peak	Seasonal	3	0.002	0.006	Poaceae sp., creosote	Creosote Bush Scrub	Imperial Reservoir	No
W-7	5	18.8	Unnamed Drainage	Trench	8S 21E 14	Thumb Peak	Seasonal	2	0.001	0.004	Poaceae sp., creosote	Creosote Bush Scrub	Imperial Reservoir	No
W-8	5	18.9	Unnamed Drainage	Trench	8S 21E 14	Thumb Peak	Seasonal	5	0.003	0.01	Poaceae sp., creosote	Creosote Bush Scrub	Imperial Reservoir	No
W-9	5	19.0	Unnamed Drainage	Trench	8S 21E 14	Thumb Peak	Seasonal	9	0.01	0.02	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-10	5	19.1	Unnamed Drainage	Trench	8S 21E 14	Thumb Peak	Seasonal	15	0.009	0.03	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-11	5	20.1	Unnamed Drainage	Trench	8S 21E 22	Thumb Peak	Seasonal	10	0.006	0.02	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-12	5	20.1	Unnamed Drainage	Trench	8S 21E 22	Thumb Peak	Seasonal	30	0.02	0.06	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-13	5	20.2	Unnamed Drainage	Trench	8S 21E 22	Thumb Peak	Seasonal	15	0.009	0.03	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-14	5	21.8	Unnamed Drainage	Trench	8S 21E 34	Thumb Peak	Seasonal	12	0.007	0.02	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-15	5	21.9	Unnamed Drainage	Trench	8S 21E 34	Thumb Peak	Seasonal	5	0.003	0.009	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-16	6	22.4	Unnamed Drainage	Trench	9S 21E 4	Thumb Peak	Seasonal	3	0.002	0.006	Poaceae sp., creosote	Creosote Bush Scrub	Imperial Reservoir	No
W-18	6	22.5	Unnamed Drainage	Trench	9S 21E 4	Thumb Peak	Seasonal	50	0.03	0.09	Poaceae sp., creosote	Desert Wash Woodland	Imperial Reservoir	No
W-17	6	22.4	Unnamed Drainage	Trench	9S 21E 4	Thumb Peak	Seasonal	2	0.001	0.004	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-19	6	22.8	Unnamed Drainage	Trench	9S 21E 4	Thumb Peak	Seasonal	25	0.014	0.05	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-20	6	24.5	Unnamed Drainage	Trench	9S 21E 10	Palo Verde	Seasonal	15	0.009	0.03	Palo Verde, creosote	Creosote Bush Scrub	Imperial Reservoir	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-21	6	24.6	Unnamed Drainage	Trench	9S 21E 10	Palo Verde	Seasonal	5	0.003	0.009	white bursage, creosote	Creosote Bush Scrub	Imperial Reservoir	No
W-22	6	24.6	Unnamed Drainage	Trench	9S 21E 10	Palo Verde	Seasonal	10	0.006	0.018	creosote	Creosote Bush Scrub	Imperial Reservoir	No
W-23	6	25.0	Unnamed Drainage	Trench	9S 21e 15	Palo Verde	Seasonal	5	0.003	0.009	smoke tree, white bursage, creosote	Desert Wash Woodland	Imperial Reservoir	No
W-24	6	26.0	Unnamed Drainage	Trench	9S 21E 22	Palo Verde	Seasonal	6	0.005	0.01	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	Yes
W-25	6	26.1	Unnamed Drainage	Trench	9S 21E 22	Palo Verde	Seasonal	3	0.002	0.006	ironwood, creosote	Creosote Bush Scrub	Imperial Reservoir	No
W-26	6	26.2	Unnamed Drainage	Trench	9S 21E 22	Palo Verde	Seasonal	6	0.003	0.01	Palo Verde, smoke tree	Desert Wash Woodland	Imperial Reservoir	No
W-27	6	26.3	Unnamed Drainage	Trench	9S 21E 22	Palo Verde	Seasonal	5	0.003	0.009	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-28	6	26.9	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	10	0.006	0.02	tamarisk, Palo Verde	Tamarisk Scrub	Imperial Reservoir	No
W-29	6	27.0	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	2	0.001	0.004	creosote, white bursage, ironwood	Creosote Bush Scrub	Imperial Reservoir	No
W-30	6	27.0	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	30	0.02	0.06	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-31	6	27.0	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	35	0.02	0.06	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-32	6	27.6	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	15	0.009	0.03	creosote shrub, Palo Verde	Creosote Bush Scrub	Imperial Reservoir	Yes
W-33	6	27.7	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	20	0.01	0.04	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-34	6	27.7	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	3	0.002	0.006	creosote shrub	Creosote Bush Scrub	Imperial Reservoir	No
W-35	6	27.9	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	15	0.009	0.03	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-36	6	27.9	Unnamed Drainage	Trench	9S 21E 26	Cibola	Seasonal	20	0.01	0.04	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
CW-1	7	28.65	Unnamed Drainage	Trench	9S 21E 36	Cibola	Seasonal	2	0.001	0.004	white bursage, creosote, cholla sp.	Creosote Bush Scrub	Imperial Reservoir	Yes
CW-2	7	28.7	Unnamed Drainage	Trench	9S 21E 36	Cibola	Seasonal	6	0.003	0.01	white bursage, creosote	Creosote Bush Scrub	Imperial Reservoir	Yes
CW-3	7	28.8	Unnamed Drainage	Trench	9S 21E 36	Cibola	Seasonal	2	0.001	0.004	white bursage, creosote	Creosote Bush Scrub	Imperial Reservoir	Yes

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
CW-4	7	29.2	Unnamed Drainage	Trench	9S 21E 36	Cibola	Seasonal	150	0.09	0.3	cat claw acacia, Palo Verde, creosote, brittle bush, arrow weed	Desert Wash Woodland	Imperial Reservoir	Yes
CW-5	7	29.25	Unnamed Drainage	Trench	9S 21E 36	Cibola	Seasonal	12	0.007	0.02	cat claw acacia, Palo Verde, creosote, brittle bush, tamarisk	Desert Wash Woodland	Imperial Reservoir	Yes
CW-6	7	30.2	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	3	0.002	0.01	tamarisk, arrow weed	Tamarisk Scrub	Imperial Reservoir	Yes
CW-7	7	31.1	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	4	0.002	0.007	tamarisk, creosote	Tamarisk Scrub	Imperial Reservoir	Yes
CW-8	7	31.15	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	14	0.008	0.03	Palo Verde, ironwood, creosote	Desert Wash Woodland	Imperial Reservoir	Yes
CW-9	7	31.2	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	8	0.005	0.015	Palo Verde, ironwood, creosote	Desert Wash Woodland	Imperial Reservoir	Yes
CW-10	7	31.35	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	6	0.003	0.01	Palo Verde, ironwood, creosote, tamarisk	Tamarisk Scrub	Imperial Reservoir	Yes
CW-11	7	31.4	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	6	0.003	0.01	Palo Verde, creosote, tamarisk	Tamarisk Scrub	Imperial Reservoir	Yes
CW-12	7	31.55	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	14	0.008	0.03	tamarisk	Tamarisk Scrub	Imperial Reservoir	Yes
CW-13	7	31.6	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	13	0.007	0.02	tamarisk	Tamarisk Scrub	Imperial Reservoir	Yes
CW-14	7	31.65	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	12	0.007	0.02	tamarisk, cat claw acacia, creosote	Tamarisk Scrub	Imperial Reservoir	Yes
CW-15	7	31.75	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	11	0.006	0.02	creosote, white bursage	Creosote Bush Scrub	Imperial Reservoir	Yes
CW-16	7	31.8	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	10	0.006	0.019	creosote, white bursage	Creosote Bush Scrub	Imperial Reservoir	Yes
CW-17	7	31.85	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	9	0.005	0.017	cholla sp., cat claw acacia, creosote	Creosote Bush Scrub	Imperial Reservoir	Yes
W-56	7	32.2	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	35	0.02	0.06	cholla sp., creosote	Desert Wash Woodland	Imperial Reservoir	Yes
W-57	7	32.5	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	20	0.01	0.04	ironwood, Palo Verde	Desert Wash Woodland	Imperial Reservoir	No
W-58	7	32.5	Unnamed Drainage	Trench	10S 21E 1	Cibola	Seasonal	8	0.005	0.015	ironwood, creosote	Desert Wash Woodland	Imperial Reservoir	No
W-59	7	32.6	Unnamed Drainage	Trench	10S 21E 2	Cibola	Seasonal	60	0.03	0.1	Palo Verde, creosote, ironwood	Desert Wash Woodland	Imperial Reservoir	Yes

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-60	7	32.8	Unnamed Drainage	Trench	10S 21E 2	Cibola	Seasonal	8	0.005	0.015	ironwood, creosote	Desert Wash Woodland	Imperial Reservoir	Yes
W-61	8	34.3	Unnamed Drainage	Trench	10S 21E 2	Palo Verde Peak	Seasonal	2	0.001	0.004	ironwood, creosote, white bursage	Desert Wash Woodland	Imperial Reservoir	No
EW-1	8	35.30a	Milpitas Wash	Trench	10S 21E 29	Palo Verde Peak	Seasonal	3749	2.2	6.9	smoke tree, cheesebush, acacia	Desert Wash Woodland	Imperial Reservoir	Yes
EW-2	8	35.80a	Unnamed Drainage	Trench	10S 21E 2	Palo Verde Peak	Seasonal	4	0.002	0.007	ironwood, creosote, brassica, krameria	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-3	8	36.05a	Unnamed Drainage	Trench	10S 21E 2	Palo Verde Peak	Seasonal	2	0.001	0.004	ironwood, creosote, brassica-tourn, krameria	Desert Wash Woodland	Imperial Reservoir	Yes
EW-5	8	36.15a	Unnamed Drainage	Trench	10S 21E 2	Palo Verde Peak	Seasonal	4	0.002	0.007	creosote, ironwood, ambrosia, krameria	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-6	8	36.20a	Unnamed Drainage	Trench	10S 21E 2	Palo Verde Peak	Seasonal	4	0.002	0.007	creosote, ironwood, ambrosia, krameria	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-7	8	36.35a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	5	0.003	0.009	creosote, ironwood, ambrosia	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-12	8	36.55a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	2	0.001	0.004	ambrosia, creosote, Palo Verde	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-14	8	36.62a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	3	0.002	0.006	creosote, ambrosia, ironwood, krameria	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-16	8	36.67a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	3	0.002	0.006	Palo Verde, ironwood, creosote, ambrosia	Desert Wash Woodland	Imperial Reservoir	Yes
EW-17	8	36.70a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	15	0.009	0.03	ironwood, Palo Verde, lycium, creosote	Desert Wash Woodland	Imperial Reservoir	Yes
EW-22	8	37.00a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	3	0.002	0.006	jojoba, ironwood, creosote, ambrosia	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-24	8	37.18a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	15	0.009	0.03	Palo Verde, ironwood, creosote, big galleta, lycium	Desert Wash Woodland	Imperial Reservoir	Yes
EW-25	8	37.20a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	15	0.009	0.03	Palo Verde, ironwood, creosote, big galleta, lycium	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-26	8	37.55a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	3	0.002	0.006	ironwood, krameria, jojoba, creosote, ambrosia	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-27	8	37.70a	Unnamed Drainage	Trench	10S 21E 3	Palo Verde Peak	Seasonal	75	0.04	0.1	ironwood, creosote, cheesebush, lycium	Desert Wash Woodland	Imperial Reservoir	Yes
EW-28	8	38.05a	Unnamed Drainage	Trench	10S 20E 3	Palo Verde Peak	Seasonal	75	0.04	0.1	ironwood, creosote, cheesebush, lycium	Desert Wash Woodland	Imperial Reservoir	Yes
EW-29	8	38.40a	Unnamed Drainage	Trench	11S 20E 1	Palo Verde Peak	Seasonal	25	0.01	0.05	galleta, creosote, ironwood	Creosote Bush Scrub	Imperial Reservoir	Yes

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
EW-34	9	39.20a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	80	0.05	0.1	Palo Verde, ironwood, creosote, ambrosia	Desert Wash Woodland	Imperial Reservoir	Yes
EW-37	9	39.70a	Unnamed Drainage	Trench	11S 20E 2	Buzzards Peak	Seasonal	80	0.05	0.1	encelia, cheesebush, ironwood, creosote	Desert Wash Woodland	Imperial Reservoir	Yes
EW-43	9	39.91a	Unnamed Drainage	Trench	11S 20E 2	Buzzards Peak	Seasonal	25	0.014	0.05	ironwood, ambrosia, encelia	Desert Wash Woodland	Imperial Reservoir	Yes
EW-44	9	39.93a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	5	0.003	0.009	creosote, ironwood	Creosote Bush Scrub	Imperial Reservoir	Yes
EW-45	9	39.94a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	25	0.014	0.05	Palo Verde, cheesebush, ironwood	Desert Wash Woodland	Imperial Reservoir	Yes
EW-47	9	40.20a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	50	0.03	0.09	ironwood, Palo Verde, creosote, krameria	Desert Wash Woodland	Salton Sea	Yes
EW-61	9	40.62a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	15	0.009	0.03	krameria, creosote, ironwood, ocotillo, ambrosia, cheesebush, encelia	Desert Wash Woodland	Salton Sea	Yes
EW-66	9	40.88a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	3	0.002	0.006	creosote, ambrosia, ironwood, krameria	Creosote Bush Scrub	Salton Sea	Yes
EW-70	9	41.12a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	150	0.09	0.3	ironwood, Palo Verde, creosote, krameria	Desert Wash Woodland	Salton Sea	Yes
EW-72	9	41.25a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	100	0.06	0.2	creosote, ambrosia, krameria, ironwood, encelia	Creosote Bush Scrub	Salton Sea	Yes
EW-75	9	41.55a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	15	0.009	0.03	ironwood, creosote, krameria	Creosote Bush Scrub	Salton Sea	Yes
EW-76	9	41.57a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	6	0.003	0.01	ironwood, creosote, ambrosia, Palo Verde, cholla	Creosote Bush Scrub	Salton Sea	Yes
EW-78	9	41.63a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	2	0.001	0.004	ironwood, Palo Verde, creosote, galleta grass, ambrosia	Creosote Bush Scrub	Salton Sea	Yes
EW-81	9	41.76a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	4	0.002	0.007	ironwood, Palo Verde, creosote, galleta, cholla	Creosote Bush Scrub	Salton Sea	Yes
EW-83	9	41.85a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	5	0.003	0.009	ironwood, creosote, ambrosia, krameria	Creosote Bush Scrub	Salton Sea	Yes
EW-89	9	42.25a	Unnamed Drainage	Trench	11S 20E 1	Buzzards Peak	Seasonal	8	0.005	0.015	ironwood, creosote, big galleta	Creosote Bush Scrub	Salton Sea	Yes
EW-91	9	44.32a	Unnamed Drainage	Trench	11S 20E 2	Buzzards Peak	Seasonal	30	0.01	0.06	bebbia, ironwood	Desert Wash Woodland	Salton Sea	Yes

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Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
EW-92	9	44.35a	Unnamed Drainage	Trench	11S 20E 2	Buzzards Peak	Seasonal	10	0.006	0.02	ironwood, Palo Verde, creosote, krameria, ambrosia	Creosote Bush Scrub	Salton Sea	Yes
EW-95	9	44.50a	Unnamed Drainage	Trench	11S 20E 2	Buzzards Peak	Seasonal	5	0.003	0.009	creosote, krameria, galleta, ironwood	Creosote Bush Scrub	Salton Sea	Yes
EW-98	10	42.80a	Unnamed Drainage	Trench	11S 20E 2	Buzzards Peak	Seasonal	3	0.002	0.006	ironwood, ambrosia, creosote	Desert Wash Woodland	Salton Sea	Yes
EW-109	10	43.59a	Unnamed Drainage	Trench	11S 20E 2	Buzzards Peak	Seasonal	100	0.06	0.2	Palo Verde, ironwood, creosote, lycium	Desert Wash Woodland	Salton Sea	Yes
EW-111	10	43.67a	Unnamed Drainage	Trench	11S 20E 2	Buzzards Peak	Seasonal	75	0.04	0.1	ambrosia, creosote, brittlebush, bebbia, cheesebush	Creosote Bush Scrub	Salton Sea	Yes
EW-126	10	44.49a	Unnamed Drainage	Trench	11S 20E 3	Buzzards Peak	Seasonal	25	0.014	0.05	lycium, bebbia, creosote, ironwood, krameria, brittlebush, brassica	Desert Wash Woodland	Salton Sea	Yes
EW-131v	10	44.90a-v	Unnamed Drainage	Trench	11S 20E 3	Buzzards Peak	Seasonal	5	0.003	0.009	creosote, ironwood, ambrosia, galleta, krameria	Creosote Bush Scrub	Salton Sea	Yes
EW-135v	10	45.15a-v	Unnamed Drainage	Trench	11S 20E 3	Buzzards Peak	Seasonal	300	0.2	0.6	creosote, Palo Verde, ironwood, krameria	Desert Wash Woodland	Salton Sea	Yes
EW-135	10	45.04a	Unnamed Drainage	Trench	11S 20E 3	Buzzards Peak	Seasonal	1	0.0006	0.002	ambrosia, creosote, krameria	Creosote Bush Scrub	Salton Sea	Yes
EW-136	10	45.12a	Unnamed Drainage	Trench	11S 20E 3	Buzzards Peak	Seasonal	70	0.04	0.1	ambrosia, creosote, krameria	Desert Wash Woodland	Salton Sea	Yes
EW-143	10	45.60a	Unnamed Drainage	Trench	12S 20E 4	Mt. Barrow	Seasonal	5	0.003	0.009	ironwood, jojoba, brassica, ambrosia, Bromus, lycium	Desert Wash Woodland	Salton Sea	Yes
EW-144	10	45.67a	Unnamed Drainage	Trench	12S 20E 4	Mt. Barrow	Seasonal	4	0.002	0.007	creosote, ambrosia, ironwood, brassica, krameria, acacia	Desert Wash Woodland	Salton Sea	Yes
EW-152	10	46.30a	Unnamed Drainage	Trench	12S 20E 4	Mt. Barrow	Seasonal	100	0.06	0.2	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	Yes
EW-162	10	47.08a	Unnamed Drainage	Trench	12S 20E 9	Mt. Barrow	Seasonal	30	0.01	0.06	Palo Verde, ironwood, creosote, bebbia, galleta, lycium	Desert Wash Woodland	Salton Sea	Yes
EW-163	10	47.15a	Unnamed Drainage	Trench	12S 20E 9	Mt. Barrow	Seasonal	3	0.002	0.006	calliandra, ironwood, creosote, bebbia, galleta, lycium	Creosote Bush Scrub	Salton Sea	Yes
EW-164	10	47.33a	Unnamed Drainage	Trench	12S 20E 9	Mt. Barrow	Seasonal	4	0.002	0.007	calliandra, galleta, ambrosia, creosote, krameria, ocotillo	Creosote Bush Scrub	Salton Sea	Yes

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
EW-165	10	47.72a	Unnamed Drainage	Trench	12S 20E 1	Mt. Barrow	Seasonal	30	0.01	0.06	ocotillo, krameria, ambrosia, creosote	Creosote Bush Scrub	Salton Sea	Yes
W-146	11	48.6	Unnamed Drainage	Trench	12S 20E 1	Mt. Barrow	Seasonal	6	0.003	0.01	Palo Verde, ironwood, white bursage	Creosote Bush Scrub	Salton Sea	Yes
W-147	11	48.6	Unnamed Drainage	Trench	12S 20E 1	Mt. Barrow	Seasonal	3	0.002	0.006	white bursage, jojoba, Palo Verde	Creosote Bush Scrub	Salton Sea	Yes
W-148	11	48.7	Unnamed Drainage	Trench	12S 20E 1	Ninemile Wash	Seasonal	8	0.005	0.015	white bursage, fairy duster, Palo Verde, lycium	Creosote Bush Scrub	Salton Sea	No
W-149	11	49.0	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	6	0.003	0.01	ironwood, Palo Verde	Creosote Bush Scrub	Salton Sea	No
W-150	11	49.5	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	3	0.002	0.006	white bursage, smoke tree, and Palo Verde	Creosote Bush Scrub	Salton Sea	No
W-151	11	49.7	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	2	0.001	0.004	white bursage, opuntia sp., creosote	Creosote Bush Scrub	Salton Sea	No
W-152	11	49.7	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	2	0.001	0.004	ironwood, Palo Verde	Desert Wash Woodland	Salton Sea	No
W-153	11	49.9	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	10	0.006	0.02	ironwood, Palo Verde	Desert Wash Woodland	Salton Sea	No
W-154	11	50.0	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	3	0.002	0.006	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-155	11	50.2	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	2	0.001	0.004	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-156	11	50.2	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	15	0.009	0.03	ironwood, Palo Verde	Desert Wash Woodland	Salton Sea	No
W-157	11	50.7	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	15	0.009	0.03	ironwood, Palo Verde	Desert Wash Woodland	Salton Sea	No
W-158	11	50.7	Unnamed Drainage	Trench	12S 20E 2	Ninemile Wash	Seasonal	50	0.03	0.1	ironwood, Palo Verde	Desert Wash Woodland	Salton Sea	No
W-159	11	51.3	Unnamed Drainage	Trench	12S 20E 3	Ninemile Wash	Seasonal	20	0.002	0.04	ironwood, Palo Verde	Desert Wash Woodland	Salton Sea	No
W-160	11	51.8	Unnamed Drainage	Trench	12S 20E 3	Ninemile Wash	Seasonal	25	0.014	0.05	ironwood, Palo Verde	Desert Wash Woodland	Salton Sea	No
W-161	11	51.9	Unnamed Drainage	Trench	12S 20E 3	Ninemile Wash	Seasonal	25	0.014	0.05	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-162	11	52.1	Unnamed Drainage	Trench	12S 20E 3	Ninemile Wash	Seasonal	30	0.01	0.1	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-164	11	52.3	Unnamed Drainage	Trench	13S 20E 5	Ninemile Wash	Seasonal	2	0.001	0.004	creosote	Desert Wash Woodland	Salton Sea	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-165	11	52.3	Unnamed Drainage	Trench	13S 20E 5	Ninemile Wash	Seasonal	2	0.001	0.004	creosote, ironwood	Desert Wash Woodland	Salton Sea	No
W-163	11	52.3	Unnamed Drainage	Trench	13S 20E 5	Ninemile Wash	Seasonal	2	0.001	0.004	creosote, ironwood	Desert Wash Woodland	Salton Sea	No
W-166	11	52.4	Unnamed Drainage	Trench	13S 20E 5	Ninemile Wash	Seasonal	2	0.001	0.004	creosote, ironwood	Desert Wash Woodland	Salton Sea	No
W-167	11	52.5	Unnamed Drainage	Trench	13S 20E 5	Ninemile Wash	Seasonal	2	0.001	0.004	creosote, ironwood	Desert Wash Woodland	Salton Sea	No
W-168	11	53.1	Unnamed Drainage	Trench	13S 20E 6	Ninemile Wash	Seasonal	15	0.009	0.03	creosote, ironwood, Palo Verde	Desert Wash Woodland	Salton Sea	No
W-169	11	53.1	Unnamed Drainage	Trench	13S 20E 6	Ninemile Wash	Seasonal	2	0.001	0.004	creosote, white bursage, ocotillo	Desert Wash Woodland	Salton Sea	No
W-170	11	53.2	Unnamed Drainage	Trench	13S 20E 6	Ninemile Wash	Seasonal	6	0.003	0.01	wolfberry, creosote	Creosote Bush Scrub	Salton Sea	No
W-171	12	54.3	Unnamed Drainage	Trench	13S 20E 7	Ninemile Wash	Seasonal	2	0.001	0.004	ironwood, white bursage	Creosote Bush Scrub	Salton Sea	No
W-172	12	54.4	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	2	0.001	0.004	ironwood, creosote, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-173	12	54.5	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	2	0.001	0.004	ironwood, creosote, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-174	12	54.5	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	4	0.002	0.007	ironwood, creosote, jojoba	Creosote Bush Scrub	Salton Sea	No
W-175	12	54.5	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	2	0.001	0.004	ocotillo, creosote	Creosote Bush Scrub	Salton Sea	No
W-176	12	54.6	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	2	0.001	0.004	ocotillo, creosote	Creosote Bush Scrub	Salton Sea	No
W-177	12	55.0	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	3	0.002	0.006	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-178	12	55.4	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	3	0.002	0.006	white bursage, ironwood	Desert Wash Woodland	Salton Sea	No
W-179	12	55.6	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	30	0.01	0.06	white bursage	Desert Wash Woodland	Salton Sea	No
W-180	12	55.8	Unnamed Drainage	Trench	13S 20E 1	Ninemile Wash	Seasonal	2	0.001	0.004	white bursage, ironwood	Desert Wash Woodland	Salton Sea	No
W-181	12	57.4	Unnamed Drainage	Trench	13S 20E 2	Ninemile Wash	Seasonal	2	0.001	0.004	Palo Verde	Creosote Bush Scrub	Salton Sea	No
W-182	12	57.7	Unnamed Drainage	Trench	13S 20E 3	Clyde	Seasonal	4	0.002	0.007	Palo Verde	Desert Wash Woodland	Salton Sea	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-183	13	57.9	Unnamed Drainage	Trench	13S 20E 3	Clyde	Seasonal	4	0.002	0.007	Palo Verde, creosote	Creosote Bush Scrub	Salton Sea	No
W-184	13	58.2	Unnamed Drainage	Trench	13S 20E 3	Clyde	Seasonal	4	0.002	0.007	ironwood, Palo Verde	Creosote Bush Scrub	Salton Sea	No
W-185	13	59.4	Unnamed Drainage	Trench	14S 20E 5	Clyde	Seasonal	12	0.007	0.02	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-186	13	59.5	Unnamed Drainage	Trench	14S 20E 5	Clyde	Seasonal	5	0.003	0.009	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-187	13	59.5	Unnamed Drainage	Trench	14S 20E 5	Clyde	Seasonal	4	0.002	0.007	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-188	13	59.5	Unnamed Drainage	Trench	14S 20E 5	Clyde	Seasonal	4	0.002	0.007	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-189	13	60.0	Unnamed Drainage	Trench	14S 20E 8	Clyde	Seasonal	3	0.002	0.006	creosote, white bursage	Desert Wash Woodland	Salton Sea	No
W-190	13	60.1	Unnamed Drainage	Trench	14S 20E 8	Clyde	Seasonal	3	0.002	0.006	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-191	13	60.2	Unnamed Drainage	Trench	14S 20E 8	Clyde	Seasonal	4	0.002	0.007	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-192	13	60.7	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	2	0.001	0.004	creosote, ironwood	Desert Wash Woodland	Salton Sea	No
W-193	13	60.7	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	2	0.001	0.004	Palo Verde, creosote	Desert Wash Woodland	Salton Sea	No
W-194	13	61.0	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	3	0.002	0.006	creosote, white bursage, ironwood	Creosote Bush Scrub	Salton Sea	No
W-195	13	61.1	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	3	0.002	0.006	creosote, white bursage, ironwood	Creosote Bush Scrub	Salton Sea	No
W-196	13	61.2	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	3	0.002	0.006	creosote, white bursage, ironwood	Creosote Bush Scrub	Salton Sea	No
W-197	13	61.3	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	2	0.001	0.004	creosote, white bursage, ironwood	Creosote Bush Scrub	Salton Sea	No
W-198	13	61.3	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	2	0.001	0.004	creosote, white bursage, ironwood	Creosote Bush Scrub	Salton Sea	No
W-199	13	61.5	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	2	0.001	0.004	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-200	13	61.6	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	18	0.01	0.03	Palo Verde, ironwood, white bursage	Desert Wash Woodland	Salton Sea	No
W-201	13	61.6	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	3	0.002	0.006	creosote, Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-202	13	61.6	Unnamed Drainage	Trench	14S 20E 1	Clyde	Seasonal	2	0.001	0.004	creosote, Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-203	13	62.0	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, Palo Verde, ironwood	Creosote Bush Scrub	Salton Sea	No
W-204	13	62.0	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-205	13	62.1	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, brittlebush, ironwood	Creosote Bush Scrub	Salton Sea	No
W-206	13	62.1	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, brittlebush	Creosote Bush Scrub	Salton Sea	No
W-207	13	62.2	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	3	0.002	0.006	creosote, brittlebush, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-208	13	62.2	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	3	0.002	0.006	creosote, brittlebush, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-209	13	62.3	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, brittlebush, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-210	13	62.3	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, brittlebush, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-211	13	62.5	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	10	0.006	0.02	Palo Verde, ironwood, brittlebush, white bursage	Creosote Bush Scrub	Salton Sea	No
W-212	14	62.7	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, brittlebush, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-213	14	62.7	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, brittlebush, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-214	14	62.7	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, brittlebush, ocotillo, ironwood	Creosote Bush Scrub	Salton Sea	No
W-215	14	62.8	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	20	0.012	0.04	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-216	14	62.9	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	20	0.012	0.04	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-217	14	62.9	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	20	0.012	0.04	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-218	14	63.4	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	8	0.005	0.015	creosote, brittlebush, ocotillo, ambrosia dumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-219	14	63.5	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	11	0.006	0.02	Palo Verde, ironwood	Creosote Bush Scrub	Salton Sea	No

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Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-220	14	63.6	Unnamed Drainage	Trench	14S 20E 2	Clyde	Seasonal	2	0.001	0.004	creosote, brittlebush, ocotillo, ambrosia clumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-221	14	63.7	Unnamed Drainage	Trench	14S 20E 2	Hedges	Seasonal	3	0.002	0.006	Palo Verde, ironwood, creosote	Desert Wash Woodland	Salton Sea	No
W-222	14	63.7	Unnamed Drainage	Trench	14S 20E 2	Hedges	Seasonal	2	0.001	0.004	Palo Verde, ironwood, creosote	Desert Wash Woodland	Salton Sea	No
W-223	14	63.7	Unnamed Drainage	Trench	14S 20E 2	Hedges	Seasonal	2	0.001	0.004	Palo Verde, ironwood, white bursage	Desert Wash Woodland	Salton Sea	No
W-224	14	63.8	Unnamed Drainage	Trench	14S 20E 2	Hedges	Seasonal	2	0.001	0.004	Palo Verde, ironwood, white bursage	Desert Wash Woodland	Salton Sea	No
W-225	14	63.8	Unnamed Drainage	Trench	14S 20E 2	Hedges	Seasonal	8	0.005	0.015	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-226	14	64.1	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	3	0.002	0.006	creosote, brittlebush, ocotillo, ambrosia clumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-227	14	64.3	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	3	0.002	0.006	creosote, brittlebush, ocotillo, ambrosia clumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-228	14	64.4	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	2	0.001	0.004	creosote, brittlebush, ocotillo, ambrosia clumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-229	14	64.4	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	3	0.002	0.006	Palo Verde, ironwood, brittlebush	Desert Wash Woodland	Salton Sea	No
W-230	14	64.5	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	2	0.001	0.004	Palo Verde, ironwood, brittlebush	Desert Wash Woodland	Salton Sea	No
W-231	14	64.5	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	3	0.002	0.006	Palo Verde, ironwood, brittlebush	Desert Wash Woodland	Salton Sea	No
W-232	14	64.6	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	4	0.002	0.007	Palo Verde, ironwood, brittlebush, white bursage	Desert Wash Woodland	Salton Sea	No
W-233	14	64.6	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	2	0.001	0.004	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-234	14	64.9	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	2	0.001	0.004	Palo Verde, ironwood, white bursage	Desert Wash Woodland	Salton Sea	No
W-235	14	64.9	Unnamed Drainage	Trench	14S 20E 3	Hedges	Seasonal	2	0.001	0.004	Palo Verde, ironwood, white bursage	Desert Wash Woodland	Salton Sea	No
W-236	14	65.2	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	4	0.002	0.007	saltbush, creosote, Palo Verde	Creosote Bush Scrub	Salton Sea	No
W-237	14	65.3	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	2	0.001	0.004	brittlebush, fairy duster, creosote, white bursage	Creosote Bush Scrub	Salton Sea	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-238	14	65.6	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	15	0.009	0.03	wolfberry, ironwood, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-239	14	65.8	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	3	0.002	0.006	white bursage, creosote	Creosote Bush Scrub	Salton Sea	No
W-240	14	65.9	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	2	0.001	0.004	white bursage, creosote, Palo Verde	Creosote Bush Scrub	Salton Sea	No
W-241	14	65.9	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	3	0.002	0.006	white bursage, creosote, Palo Verde	Creosote Bush Scrub	Salton Sea	No
W-242	14	65.9	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	6	0.003	0.01	white bursage, creosote	Creosote Bush Scrub	Salton Sea	No
W-243	14	66.0	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	5	0.003	0.009	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-244	14	66.0	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	12	0.007	0.02	Palo Verde, ironwood	Desert Wash Woodland	Salton Sea	No
W-245	14	66.5	Unnamed Drainage	Trench	15S 20E 3	Hedges	Seasonal	6	0.003	0.01	ironwood, creosote	Creosote Bush Scrub	Salton Sea	No
W-246	14	66.7	Unnamed Drainage	Trench	15S 20E 2	Hedges	Seasonal	2	0.001	0.004	white bursage, creosote	Creosote Bush Scrub	Salton Sea	No
W-247	14	66.8	Unnamed Drainage	Trench	15S 20E 1	Hedges	Seasonal	2	0.001	0.004	white bursage, creosote, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-249	14	67.8	Unnamed Drainage	Trench	15S 20E 1	Ogilby	Seasonal	2	0.001	0.004	ironwood, creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-250	14	68.4	Unnamed Drainage	Trench	15S 20E 1	Ogilby	Seasonal	10	0.006	0.02	Palo Verde, ironwood	Creosote Bush Scrub	Salton Sea	No
W-251	15	68.5	Unnamed Drainage	Trench	15S 20E 1	Ogilby	Seasonal	2	0.001	0.004	Palo Verde, creosote	Creosote Bush Scrub	Salton Sea	No
W-252	15	68.6	Unnamed Drainage	Trench	15S 20E 1	Ogilby	Seasonal	8	0.005	0.015	white bursage, ocotillo, ironwood	Creosote Bush Scrub	Salton Sea	No
W-253	15	68.6	Unnamed Drainage	Trench	15S 20E 1	Ogilby	Seasonal	5	0.003	0.009	Palo Verde, creosote	Creosote Bush Scrub	Salton Sea	No
W-254	15	68.7	Unnamed Drainage	Trench	15S 20E 1	Ogilby	Seasonal	5	0.003	0.009	ironwood, Palo Verde	Creosote Bush Scrub	Salton Sea	No
W-255	15	68.7	Unnamed Drainage	Trench	15S 20E 1	Ogilby	Seasonal	5	0.003	0.009	ironwood, creosote	Creosote Bush Scrub	Salton Sea	No
W-256	15	69.0	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	8	0.005	0.015	Palo Verde, creosote	Creosote Bush Scrub	Salton Sea	No
W-257	15	69.0	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	2	0.001	0.004	creosote, Palo Verde, white bursage	Creosote Bush Scrub	Salton Sea	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-258	15	69.2	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	5	0.003	0.009	creosote, ironwood	Creosote Bush Scrub	Salton Sea	No
W-259	15	69.3	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	3	0.002	0.006	ironwood, white bursage, creosote	Creosote Bush Scrub	Salton Sea	No
W-260	15	69.7	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	10	0.007	0.02	Palo Verde, creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-261	15	69.7	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	2	0.001	0.004	creosote, Palo Verde, white bursage	Creosote Bush Scrub	Salton Sea	No
W-262	15	69.8	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	6	0.003	0.01	Palo Verde, creosote	Creosote Bush Scrub	Salton Sea	No
W-263	15	69.9	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	2	0.001	0.004	creosote, white bursage, ironwood	Creosote Bush Scrub	Salton Sea	No
W-264	15	70.1	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	7	0.004	0.02	Palo Verde, ironwood, white bursage	Creosote Bush Scrub	Salton Sea	No
W-265	15	70.4	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	5	0.003	0.009	Palo Verde, creosote	Creosote Bush Scrub	Salton Sea	No
W-266	15	70.5	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	2	0.001	0.004	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-267	15	70.5	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	3	0.002	0.006	creosote, white bursage, ironwood	Creosote Bush Scrub	Salton Sea	No
W-268	15	70.6	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	2	0.001	0.004	creosote, ironwood	Creosote Bush Scrub	Salton Sea	No
W-269	15	70.7	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	3	0.002	0.006	creosote, ironwood	Creosote Bush Scrub	Salton Sea	No
W-270	15	70.7	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	2	0.001	0.004	creosote, Palo Verde, white bursage, ironwood	Creosote Bush Scrub	Salton Sea	No
W-271	15	70.8	Unnamed Drainage	Trench	15S 20E 2	Ogilby	Seasonal	6	0.003	0.01	creosote, ironwood	Creosote Bush Scrub	Salton Sea	No
W-272	15	70.8	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	4	0.002	0.007	creosote, ironwood, white bursage	Creosote Bush Scrub	Salton Sea	No
W-273	15	70.8	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	3	0.002	0.006	white bursage, creosote	Creosote Bush Scrub	Salton Sea	No
W-274	15	70.8	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	2	0.001	0.004	white bursage, creosote	Creosote Bush Scrub	Salton Sea	No
W-275	15	71.0	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	3	0.002	0.006	creosote, smoke tree, white bursage	Creosote Bush Scrub	Salton Sea	No
W-276	15	71.1	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	8	0.005	0.015	smoke tree, ironwood, white bursage, creosote	Creosote Bush Scrub	Salton Sea	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-277	15	71.2	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	5	0.003	0.009	milkweed, creosote, ironwood	Creosote Bush Scrub	Salton Sea	No
W-278	15	71.6	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	2	0.001	0.004	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-279	15	71.6	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	5	0.003	0.009	smoke tree, creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-280	15	71.6	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	2	0.001	0.004	white bursage, creosote	Creosote Bush Scrub	Salton Sea	No
W-281	15	71.6	Unnamed Drainage	Trench	15S 20E 3	Ogilby	Seasonal	2	0.001	0.004	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-282	15	71.9	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	3	0.002	0.006	ironwood, creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-283	15	71.9	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	3	0.002	0.006	creosote, ironwood, white bursage	Creosote Bush Scrub	Salton Sea	No
W-284	15	72.0	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	12	0.007	0.02	ironwood, creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-285	15	72.3	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	6	0.003	0.01	Palo Verde, ironwood, ocotillo, white bursage	Creosote Bush Scrub	Salton Sea	No
W-286	15	72.3	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	2	0.001	0.004	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-287	15	72.5	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	5	0.003	0.009	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-288	15	72.5	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	5	0.003	0.009	creosote, white bursage, ocotillo	Creosote Bush Scrub	Salton Sea	No
W-289	15	72.8	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	10	0.006	0.02	creosote, white bursage	Creosote Bush Scrub	Salton Sea	No
W-290	16	73.3	Unnamed Drainage	Trench	16S 20E 1	Ogilby	Seasonal	5	0.003	0.009	creosote, smoke tree, ocotillo, ambrosia, brittlebush	Creosote Bush Scrub	Salton Sea	No
W-291	16	73.6	Unnamed Drainage	Trench	16S 20E 1	Ogilby	Seasonal	4	0.002	0.007	creosote, smoke tree, ocotillo, ambrosia, brittlebush	Creosote Bush Scrub	Salton Sea	No
W-292	16	74.4	Unnamed Drainage	Trench	16S 20E 1	Ogilby	Seasonal	2	0.001	0.004	creosote, smoke tree, ocotillo, ambrosia, brittlebush	Creosote Bush Scrub	Salton Sea	No
W-293	16	74.6	Unnamed Drainage	Trench	16S 20E 1	Ogilby	Seasonal	2	0.001	0.004	creosote, ambrosia dumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-294	16	74.7	Unnamed Drainage	Trench	16S 20E 1	Ogilby	Seasonal	2	0.001	0.004	creosote, ambrosia dumosa, milkweed	Creosote Bush Scrub	Salton Sea	No

TABLE M-1 (cont'd)

Wetlands and Dry Washes Crossed by the North Baja Pipeline Expansion Project

Map I.D. No.	Map Page	Entering Milepost	Drainage Name	Construction Method	Township Range Section	USGS 7.5-minute Quadrangle	Seasonal or Perennial	Width (feet)	Project Impact (acres)	A-Line Impact (acres)	Vegetation	Habitat Type	Watershed	Drains to Colorado River
W-295	16	74.8	Unnamed Drainage	Trench	16S 20E 1	Ogilby	Seasonal	2	0.001	0.004	creosote, ambrosia dumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-296	16	75.0	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	2	0.001	0.004	creosote, brittlebush, ocotillo, ambrosia clumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-297	16	75.1	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	2	0.001	0.004	ambrosia dumosa, larrea tridentata	Creosote Bush Scrub	Salton Sea	No
W-298	16	75.2	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	2	0.001	0.004	ambrosia dumosa, larrea tridentata	Creosote Bush Scrub	Salton Sea	No
W-299	16	75.2	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	3	0.002	0.006	creosote, brittlebush, ocotillo, ambrosia clumosa, milkweed	Creosote Bush Scrub	Salton Sea	No
W-300	16	75.5	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	5	0.003	0.009	creosote	Creosote Bush Scrub	Salton Sea	No
W-301	16	75.8	Unnamed Drainage	Trench	16S 20E 2	Ogilby	Seasonal	15	0.009	0.03	creosote	Creosote Bush Scrub	Salton Sea	No
W-302	17	77.0	Unnamed Drainage	Trench	16S 20E 2	Grays Well	Seasonal	3	0.003	0.006	creosote	Creosote Bush Scrub	Salton Sea	No
								7948	4.08181	13.05418				

APPENDIX N

FIRE PREVENTION AND SUPPRESSION PLAN

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North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix N
Fire Prevention and Suppression Plan

Prepared for:

United States Department of the Interior (USDI)
Bureau of Land Management (BLM)
Arizona State Office
California State Office

May 2006

North Baja Pipeline Expansion Project

Fire Prevention and Suppression Plan

1. Introduction

The Fire Prevention and Suppression Plan (Fire Plan) identifies measures to be taken by North Baja Pipeline, LCC (North Baja) and its contractors (Contractor) to ensure that fire prevention and suppression measures are carried out in accordance with Federal, State, and local regulations. Measures identified in this Fire Plan apply to work within the project area defined as the right-of-way (ROW), access roads, all work and storage areas, whether temporary or permanent, and other areas used during construction and operation of the project. This Fire Plan was developed in accordance with the U.S. Department of the Interior, Bureau of Land Management (BLM) ROW Plans of Development and Grants, BLM Manual Handbook H-2901-1.

2. Purpose

The risk of fire danger during pipeline construction is related to smoking, refueling activities, operating vehicles and other equipment off roadways, welding activities, and the use of explosive materials and flammable liquids. During pipeline operation, risk of fire is primarily from vehicles and pipeline maintenance activities that require welding.

This Fire Plan establishes standards and practices that will minimize risk of fire danger and, in case of fire, provide for immediate suppression.

3. Responsibilities and Coordination

This Fire Plan will be implemented by North Baja and the Contractor on the North Baja Pipeline Expansion Project (Project). North Baja and the Contractor have the responsibility for providing all necessary fire-fighting equipment on the project site to their respective employees, and operating under the requirements of this Fire Plan. Prior to construction, North Baja will contact the appropriate fire control authorities to establish communications, obtain any required permits (such as burning or fire waiver permits prior to conducting any heavy equipment or burning activities), and/or fulfill other obligations as directed by fire control authorities. In addition to the above, North Baja will:

- Ensure that prevention, detection, pre-suppression, and suppression activities are in accordance with this Fire Plan and Federal, State, and county laws, ordinances, and regulations pertaining to fire;
- Accompany agency representatives on fire tool and equipment inspections and take corrective action upon notification of any fire protection requirements that are not in compliance; and
- Restrict operations on Federal lands during conditions of high fire danger as directed by the BLM as described in Section 4.1.11, Restricted Operations.

The fire prevention and suppression measures described in this Fire Plan will be in effect from pre-construction to the end of restoration. These restrictions may change by advance written notice by fire control authorities. However, required tools and equipment will be kept in serviceable condition and will be immediately available at all times.

4. Fire Prevention Measures

Methods and procedures that will be implemented prior to and during construction, operation, maintenance and termination of the project to minimize the risk of fire are described below.

a. Training

The Contractor will train all personnel about the measures to take in the event of a fire. The Contractor will also inform each construction crew member of fire dangers, locations of extinguishers and equipment, and individual responsibilities for fire prevention and suppression during regular safety briefings. Smoking and fire rules also will be discussed with the Contractor and all field personnel during the project's environmental training.

b. Smoking

Smoking is prohibited except in areas cleared and graded a minimum of 10 feet in diameter to mineral soil. All burning tobacco and matches will be extinguished before discarding. Smoking also is prohibited while operating equipment or vehicles, except in enclosed cabs or vehicles.

Smoking is never permitted in any area designated by DANGER or NO SMOKING signs. Smoking is not permitted in these areas regardless of any other factor. Smoking is not permitted on the pipeline ROW. Smoking is only permitted on access roads, within vehicles, and in approved smoking areas as described in the paragraph above.

c. Spark Arresters

During construction, operation, maintenance and termination of the ROW, all equipment operating with an internal combustion engine will be equipped with federally approved spark arresters. Spark arresters are not required on trucks, buses, and passenger vehicles (excluding motorcycles) that are equipped with an unaltered muffler or on diesel engines equipped with a turbocharger. Agency fire inspection officers will have full authority to inspect spark arresters on project equipment prior to its use on the project on Federal lands and periodically during the construction project.

d. Parking, Vehicle Operation, and Storage Areas

In no case will motorized equipment, including worker transportation vehicles, be driven or parked outside of the designated and approved work limits. Equipment parking areas, the ROW, staging areas, designated vehicle-parking areas, and small stationary engine sites, where permitted, will be cleared of all flammable material. Clearing will extend a minimum of 2 feet beyond the edge of the area to be occupied, but not beyond the boundaries of the approved ROW, extra workspace or ancillary site. Glass containers will not be used to store gasoline or other flammables.

e. Equipment

All motor vehicles and equipment will carry at least one long handled (48 inch minimum) round point shovel, a double-bit ax or Pulaski (3.5 pounds or larger) and one dry chemical fire extinguisher (with a UL rating of at least 5B or C). Individuals using power saws and grinders will have a shovel as described above, and an 8-ounce capacity fire extinguisher immediately available. All equipment will be kept in a serviceable condition and readily available.

The Contractor shall maintain a list, to be provided to local fire protection agencies, of all equipment which is either specifically designed for or capable of being adapted to fighting fires. The Contractor shall provide basic fire fighting equipment on-site during construction, including fire extinguishers, shovels, axes and other tools in sufficient number so that each employee on site can assist in the event of a fire-fighting operation. See Attachment A, Contractor's Specification for Fire Prevention and Control, for a complete list of equipment that the North Baja requires the Contractor to provide at various locations on the project site.

f. Road Closures

The Contractor will notify the appropriate fire suppression agency of the scheduled closures prior to the open cut crossing of a road. If required, the Contractor will construct a bypass prior to the open-cut installation of a road crossing, unless a convenient detour can be established on existing project approved roads or within project approved work limits. All bypasses will be clearly marked by the contractor. During road closures the Contractor will designate one person, who knows the bypass, to direct traffic. The Contractor will minimize, to the extent possible, the duration of road closures.

g. Refueling

Fuel trucks will have a large fire extinguisher charged with the appropriate chemical to control electrical and gas fires. The extinguisher will be a minimum size 35-pound capacity with a minimum 30 B.C. rating. Power saw refueling will be done in an area that has first been cleared of material that could catch fire.

h. Burning

No burning of slash, brush, stumps, trash, explosives storage boxes, or other project debris will be permitted on the project. No lunch or warming fires or barbecue grills will be allowed.

i. Flammable Liquids and Explosives

The handling and use of explosives shall be conducted in strict conformance with all local, State, and Federal regulations as detailed in North Baja's construction specification on Blasting.

j. Fire Guard

The Contractor will designate a Fire Guard on each construction crew prior to the start of construction activities each day. The Fire Guard must be physically able, vigilant, and suitably trained to detect fires and use required fire-fighting equipment, according to the requirements specified in this Fire Plan. An alternative or back-up Fire Guard will be designated to assume responsibility if the primary Guard is unavailable to perform his or her duties. The Contractor will provide, if required by North Baja, additional fire watch people with radio communication to the Fire Guard if the construction activity becomes too wide spread for one Fire Guard to manage effectively.

k. Fire Guard Communications

The Fire Guard will be responsible for maintaining contact with fire control agencies and will be equipped with a radio or cellular telephone so immediate contact with local fire control agencies can be made. If cellular telephone coverage is not available, the Fire Guard will use the contractor's frequency to contact their radio base at the Contractor's yard. From there, yard personnel will telephone emergency dispatch.

l. Welding

One 5-gallon back-up pump will be required with each welding unit in addition to the standard fire equipment required in all vehicles. All equipment will be kept in a serviceable condition and readily available.

m. Restricted Operations

The Contractor will restrict or cease operations on Federal lands during periods of high fire danger at the direction of the BLM Fire Management Officer. Restrictions may vary from stopping certain operations at a given time or stopping all operations. North Baja may obtain approval to continue some or all operations if acceptable precautions are implemented. A written waiver must be issued to the Contractor.

The responsible BLM Fire Management Officer will notify North Baja the previous day if fire danger predictions call for restrictions the following day. If a sudden change in fire danger requires restrictions during the day, the BLM Fire Management Officer will notify North Baja immediately. North Baja will immediately notify the Contractor of restricted activities.

n. Monitoring

Construction and Environmental Inspectors for North Baja will inspect the job site and the Contractor's operations for compliance with all provisions of this Fire Plan. In addition, Federal State, and local fire control agencies may perform inspections in areas under their jurisdiction at their discretion.

o. Pipeline Operation and Maintenance

During pipeline operation, the risk of fire danger is minimal. The primary causes of fire on the ROW result from unauthorized entry by individuals utilizing the ROW for recreational purposes and from fires started outside the ROW. In the latter case, authorities can use the ROW as a potential firebreak. After the completion of pipeline construction, North Baja will block access in some locations to the ROW in coordination with the land managing agencies to minimize recreational use of the ROW. However, most of the ROW is in relatively flat terrain where there is no realistic way to block access. BLM's restricted routes of travel will help to limit recreational access. North Baja's maintenance and patrol personnel will be equipped with basic fire-fighting equipment including fire extinguishers and shovels as described in Section 4.1.5, Equipment. Maintenance crews will also carry emergency response/fire control contract phone numbers.

5. Fire Suppression

a. Suppression

The Contractor will take the following actions should a fire occur within the project area during construction:

- Take immediate action to suppress fires using all available manpower and equipment;
- Notify the Fire guard;
- Immediately notify the nearest fire suppression agency of the fire location, action taken, and status (see Section 6.2);
- Immediately notify North Baja of the fire location and action taken; and
- Relinquish the Fire Guard's direction of fire suppression activities to agency fire management officers upon their arrival.

Note: If required, personnel may leave the ROW boundaries ONLY to accomplish fire suppression. Heavy equipment is not to leave the ROW to suppress a fire unless directed by a BLM Representative on Federal lands or by the State or local authorities on private or State lands.

If a reported fire is controlled, the Fire guard will note the location and monitor the progress in extinguishing the fire. The Fire Guard, or his/her designee, will remain at the fire scene until it is fully extinguished. The extinguished fire will be monitored in accordance with procedures described in Section 5.2 below.

When reported by the BLM Fire Management Officer, the Contractor will make any equipment and personnel currently at the site temporarily available for fighting fires in the vicinity of the project. Payment of such services will be made at rates determined by the BLM Fire Management Officer.

b. Monitoring

The Contractor will mark the location and boundaries of all extinguished fires. The extinguished fire site will be monitored by the contractor for a minimum of 24 hours. Monitoring includes walking the fire site perimeter, as well as crossing through the site. The Fire Guard will maintain a log of all extinguished fire locations for future reference.

c. Notification

Construction crew members will report all fires, whether extinguished or controlled, to the Fire Guard. If the fire is uncontrolled, the Contractor's Fire Guard will call the nearest fire suppression agency (911) and the North Baja Lead Environmental Inspector. Information regarding the location of the fire, property ownership, and closest access roads should be reported to the 911 operator and North Baja.

If a reported fire is controlled, but not extinguished, the fire guard will call to notify the nearest police/fire authorities (see Section 6.2) using the non-emergency telephone line to alert them of the situation. The status of the fire will be monitored by the Fire Guard and when extinguished the nearest fire suppression agency will be notified.

North Baja will also immediately contact the nearest landowner(s). North Baja will maintain and provide the Contractor with an up-to-date list of landowner and land management agency contacts along the pipeline ROW.

d. Emergency Contacts

Construction	Phone Number	Office Location	BLM Contact
Arizona			
La Paz County	911 311 520-669-2281	Emergency Number Non-emergency Number County Sheriff's Office	
California			
Riverside County	911	Emergency Number County Sheriff's Office (Non-emergency)	
Imperial County	911	Emergency Number County Sheriff's Office (Non-emergency)	

ATTACHMENT A

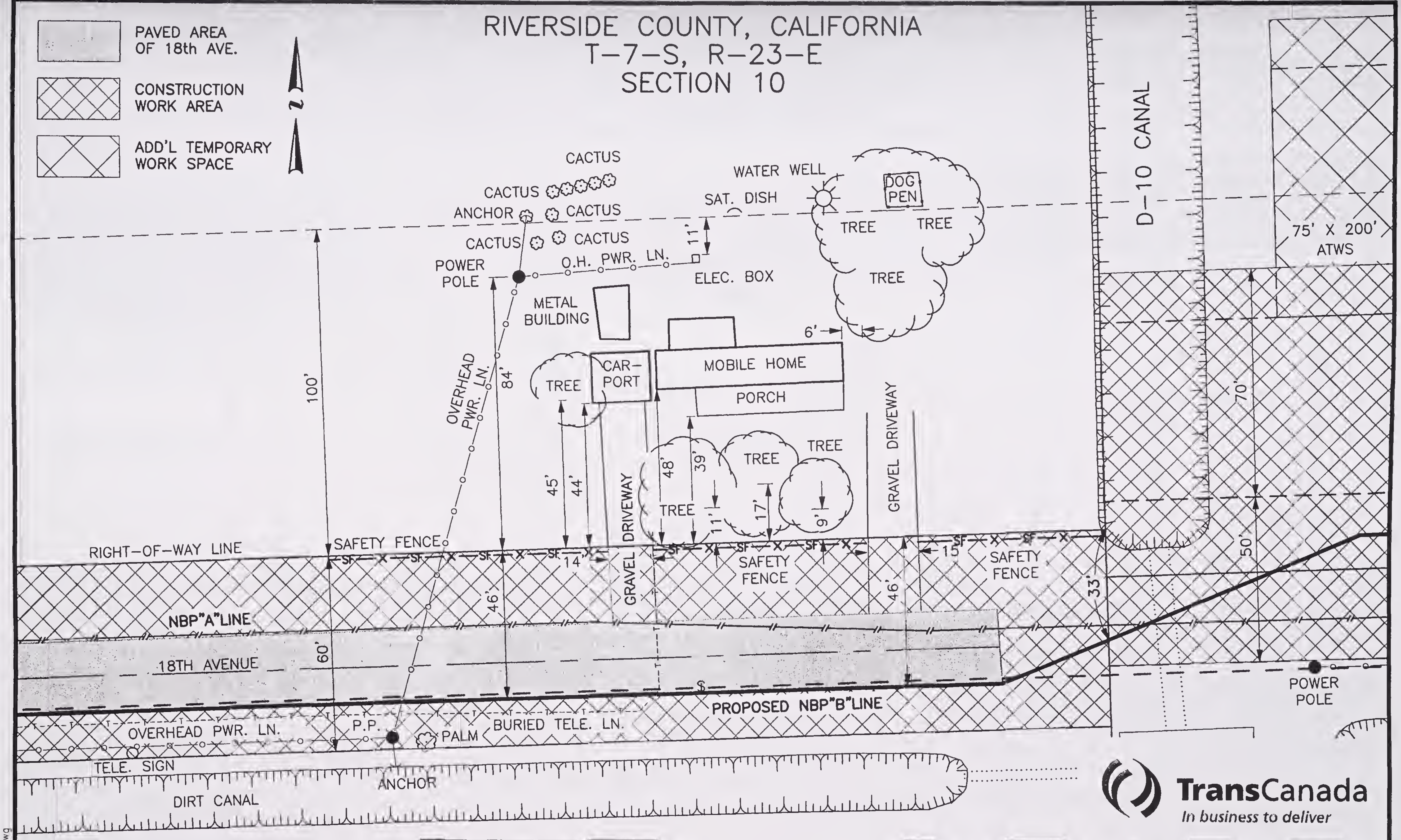
North Baja Construction Specifications Regarding Fire Prevention and Control

[To be provided when construction specifications are complete.]

APPENDIX O

SITE-SPECIFIC RESIDENTIAL CONSTRUCTION MITIGATION PLANS

B-Line



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0 20 40 80
GRAPHIC SCALE

LOCATION - DETAILS
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8580 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 01-RES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-101	A

4200ESS101 11/03/2005 SJS

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Feb 02, 2006 - 9:54 AM

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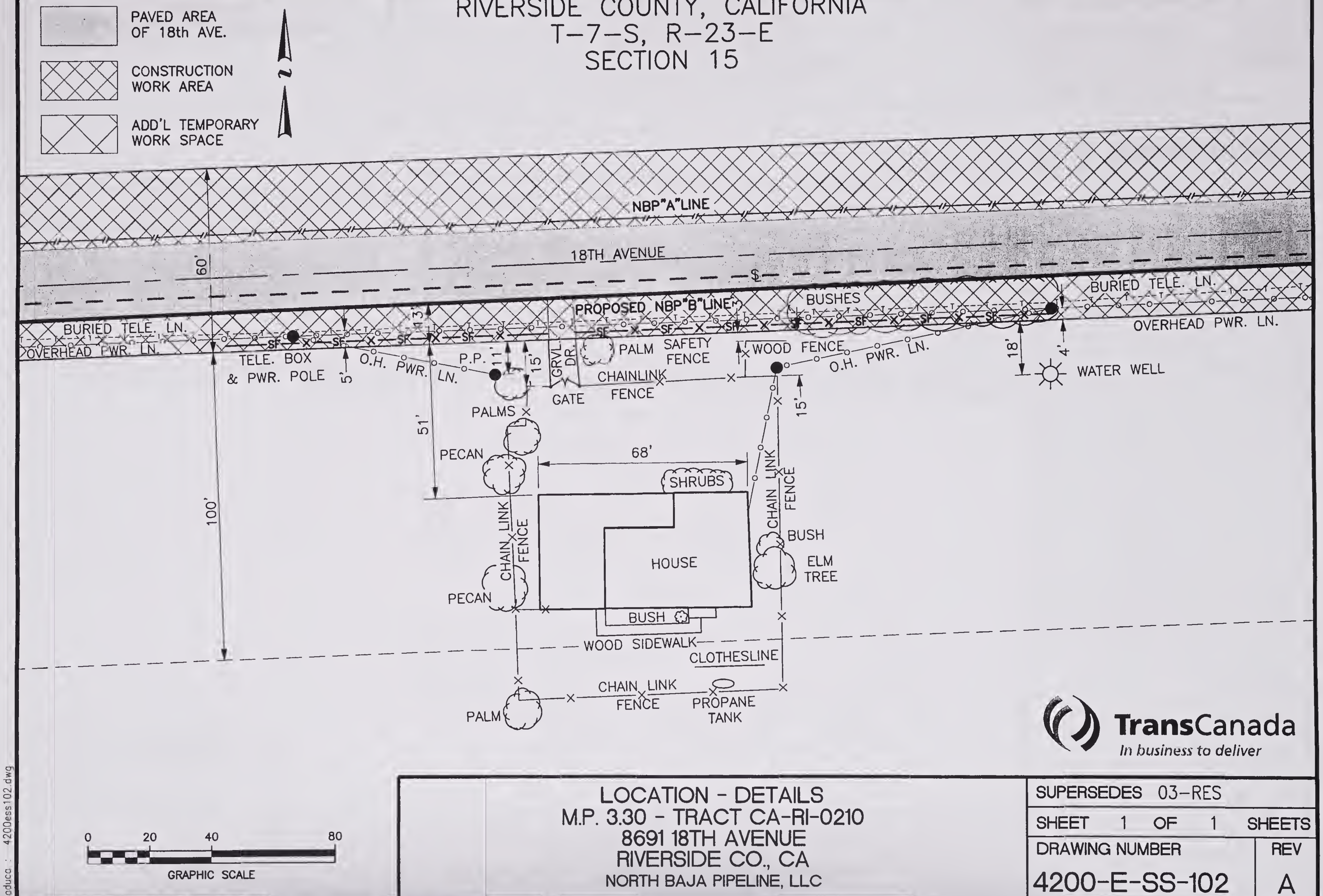
SECTION 15



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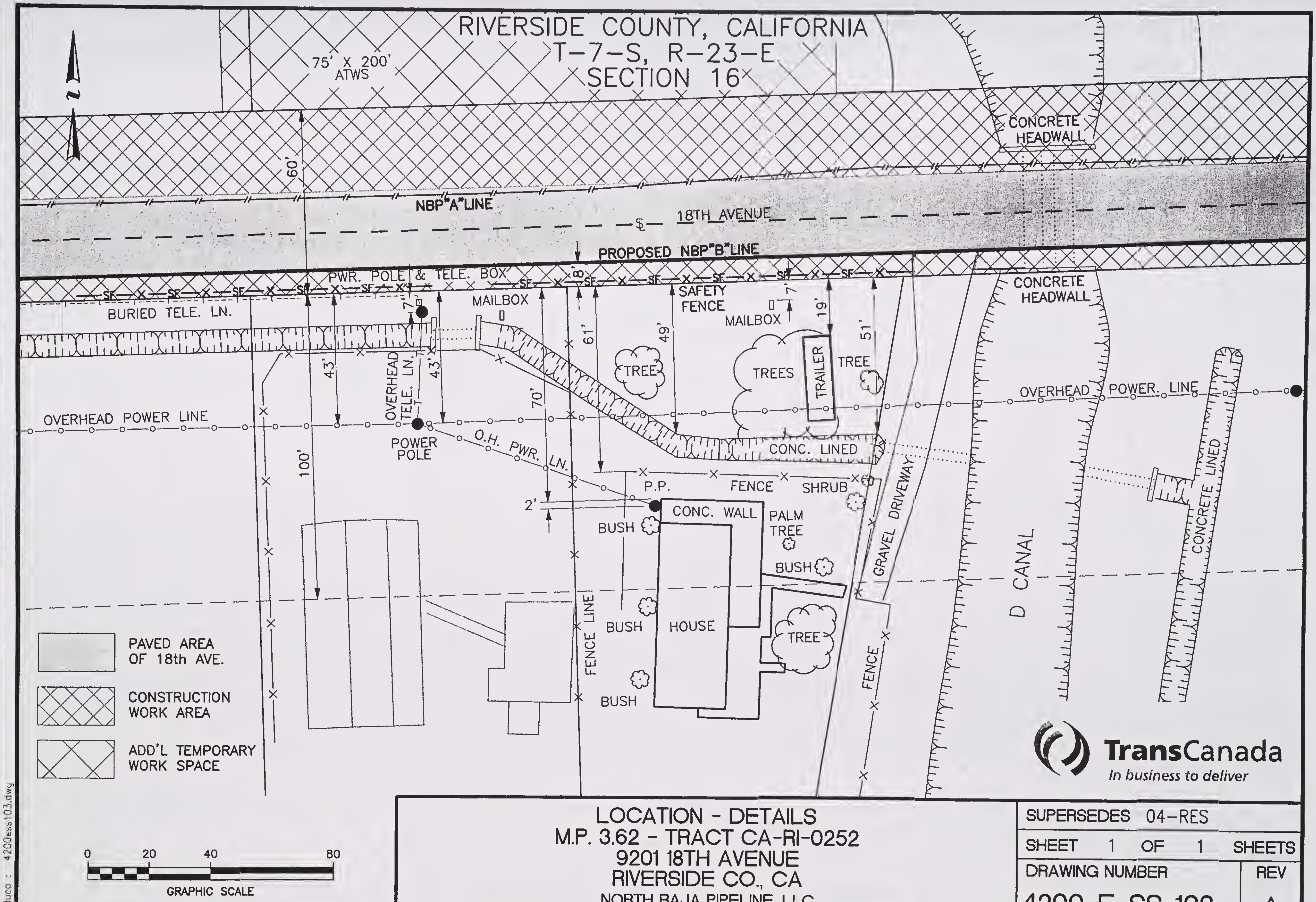
LOCATION - DETAILS
M.P. 3.30 - TRACT CA-RI-0210
8691 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 03-RES
SHEET 1 OF 1 SHEETS
DRAWING NUMBER 4200-E-SS-102
REV A

poduca : 4200ess102.dwg

4200ESS102 11/03/2005 SJS

Feb 02, 2006 - 9:55 AM



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 3.62 - TRACT CA-RI-0252
9201 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 04-RES

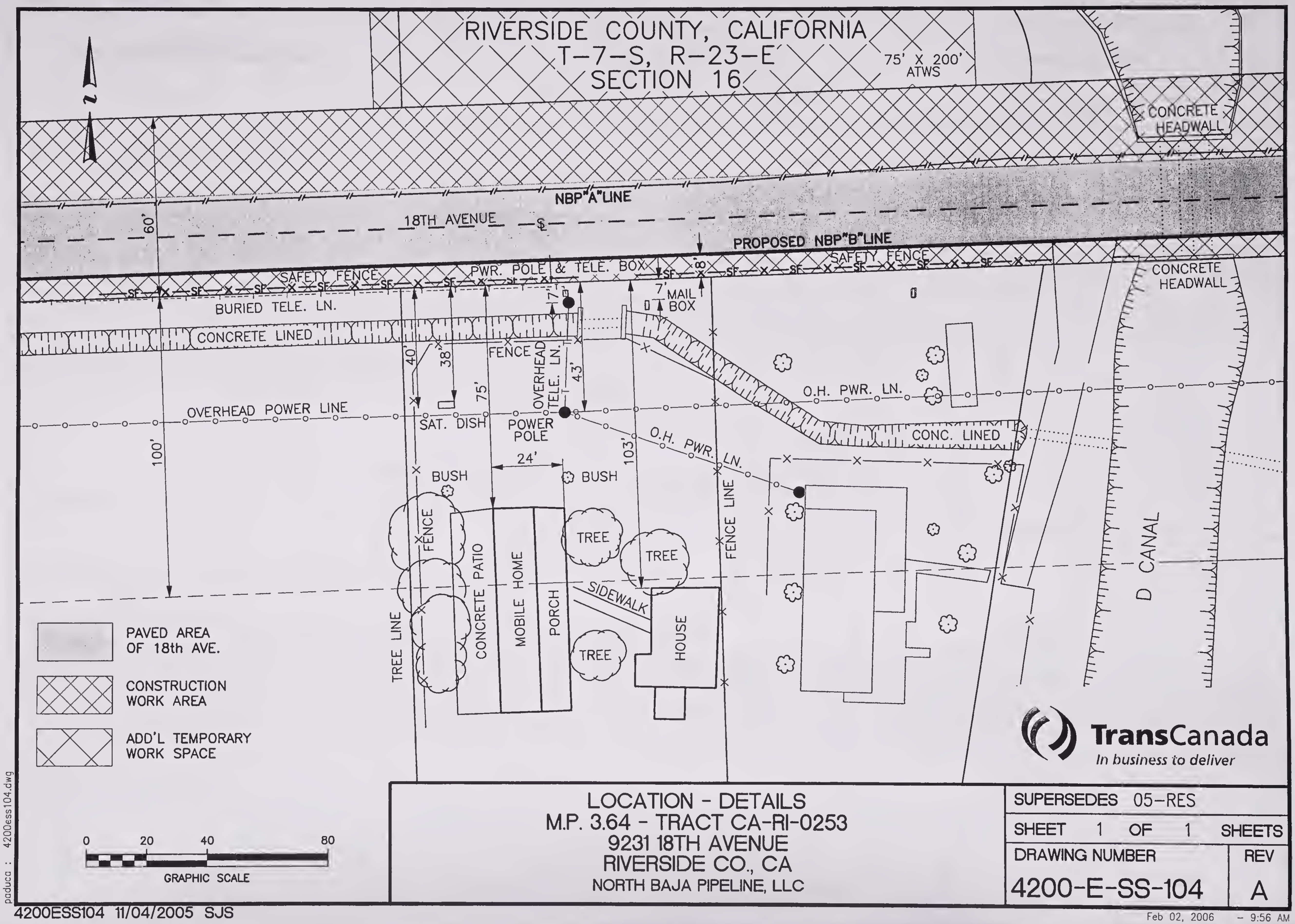
SHEET 1 OF 1 SHEETS

DRAWING NUMBER	REV
4200-E-SS-103	A

paduca : 4200ess103.dwg

4200ESS103 11/04/2005 SJS

Feb 02, 2006 - 9:55 AM



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 3.64 - TRACT CA-RI-0253
9231 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

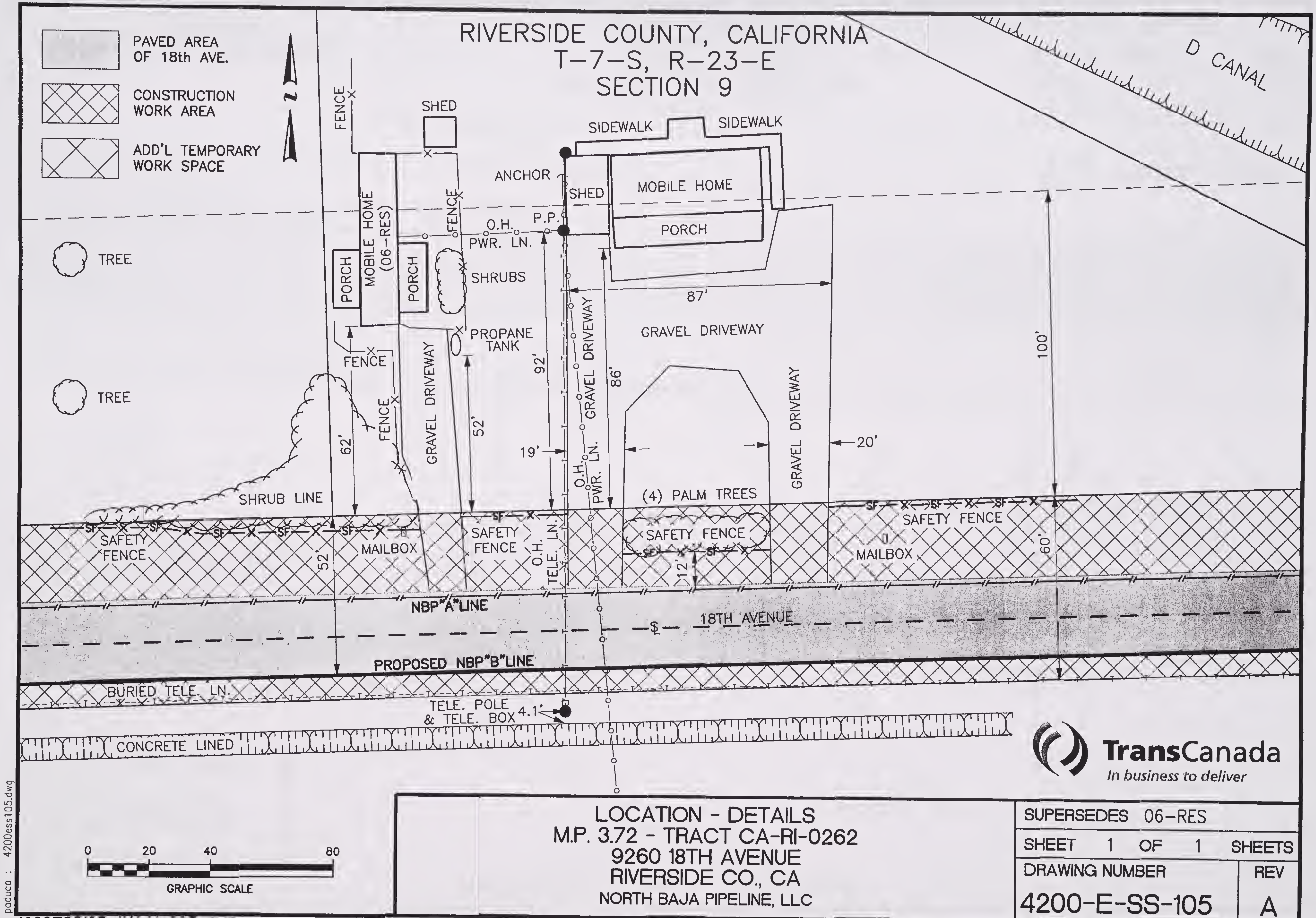
SUPERSEDES 05-RES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-104	A

paduca : 4200ess104.dwg

4200ESS104 11/04/2005 SJS

Feb 02, 2006 - 9:56 AM

RIVERSIDE COUNTY, CALIFORNIA
T-7-S, R-23-E
SECTION 9



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 3.72 - TRACT CA-RI-0262
9260 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

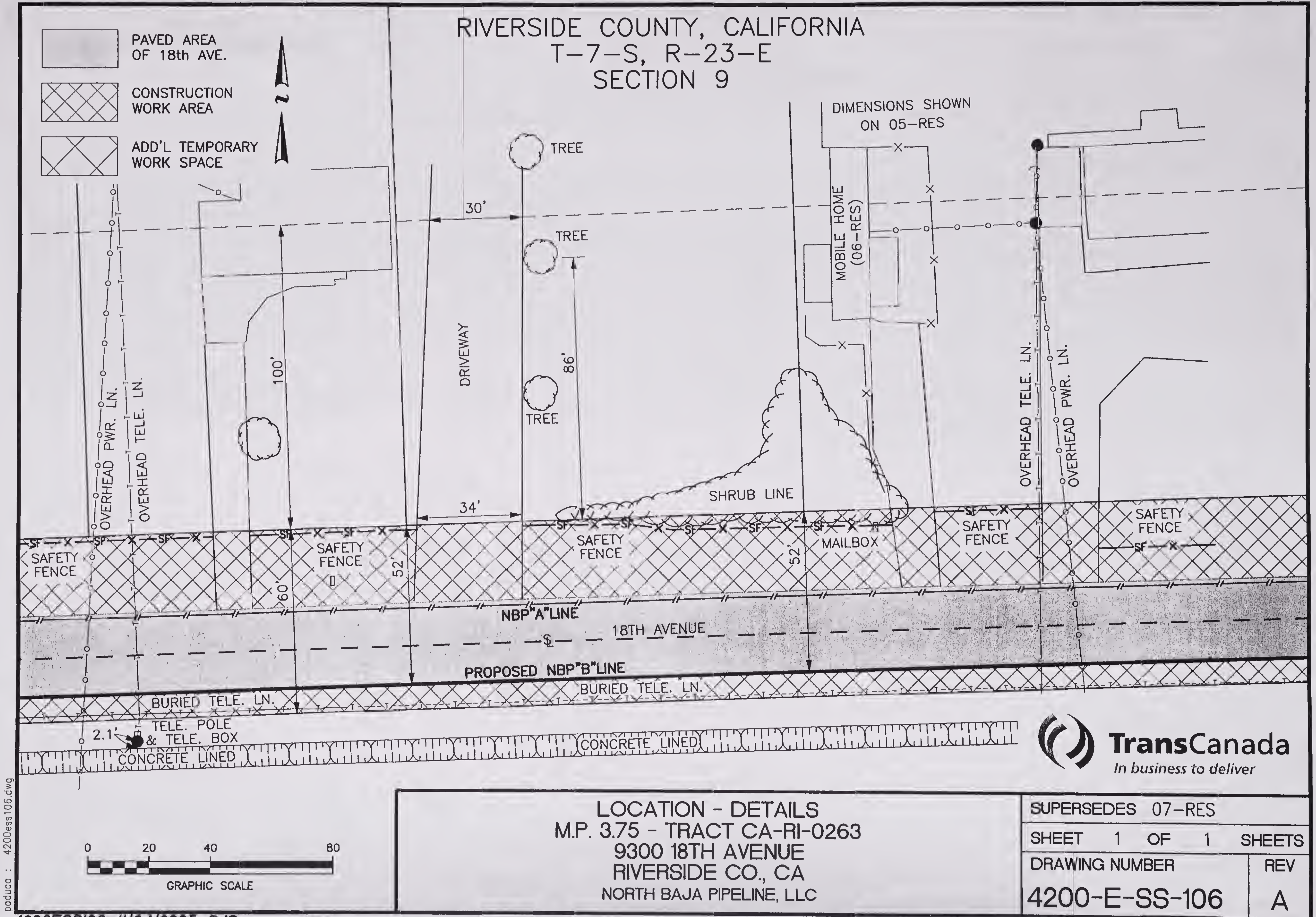
SUPERSEDES 06-RES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-105	A

paduca : 4200ess105.dwg

4200ESS105 11/04/2005 SJS

Feb 02, 2006 - 9:56 AM

RIVERSIDE COUNTY, CALIFORNIA
T-7-S, R-23-E
SECTION 9



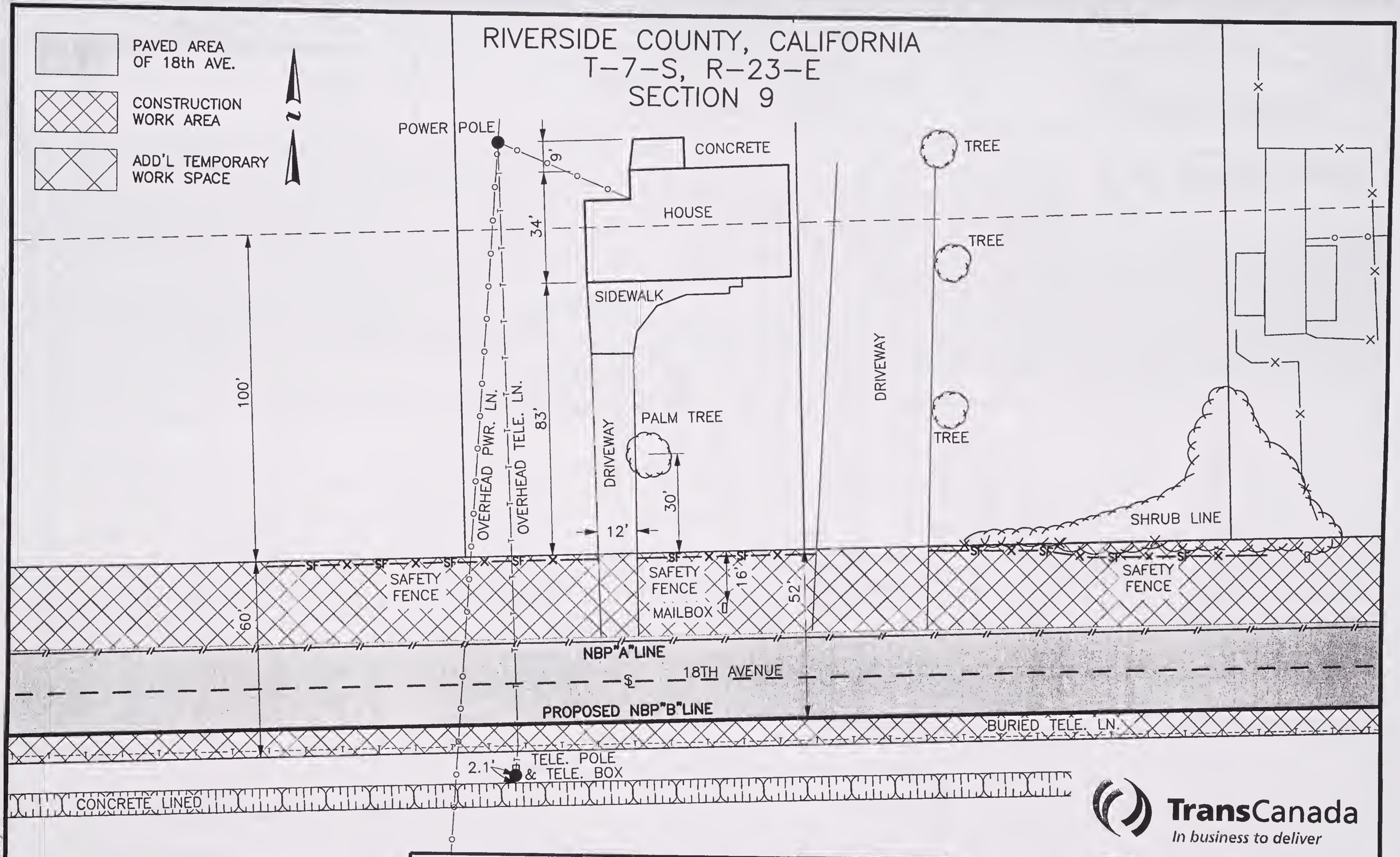
TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 3.75 - TRACT CA-RI-0263
9300 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	07-RES			
SHEET	1	OF	1	SHEETS
DRAWING NUMBER				REV
4200-E-SS-106				A

4200ESS106 11/04/2005 SJS

Feb 02, 2006 - 9:56 AM



0 20 40 80

GRAPHIC SCALE

TransCanada
In business to deliver

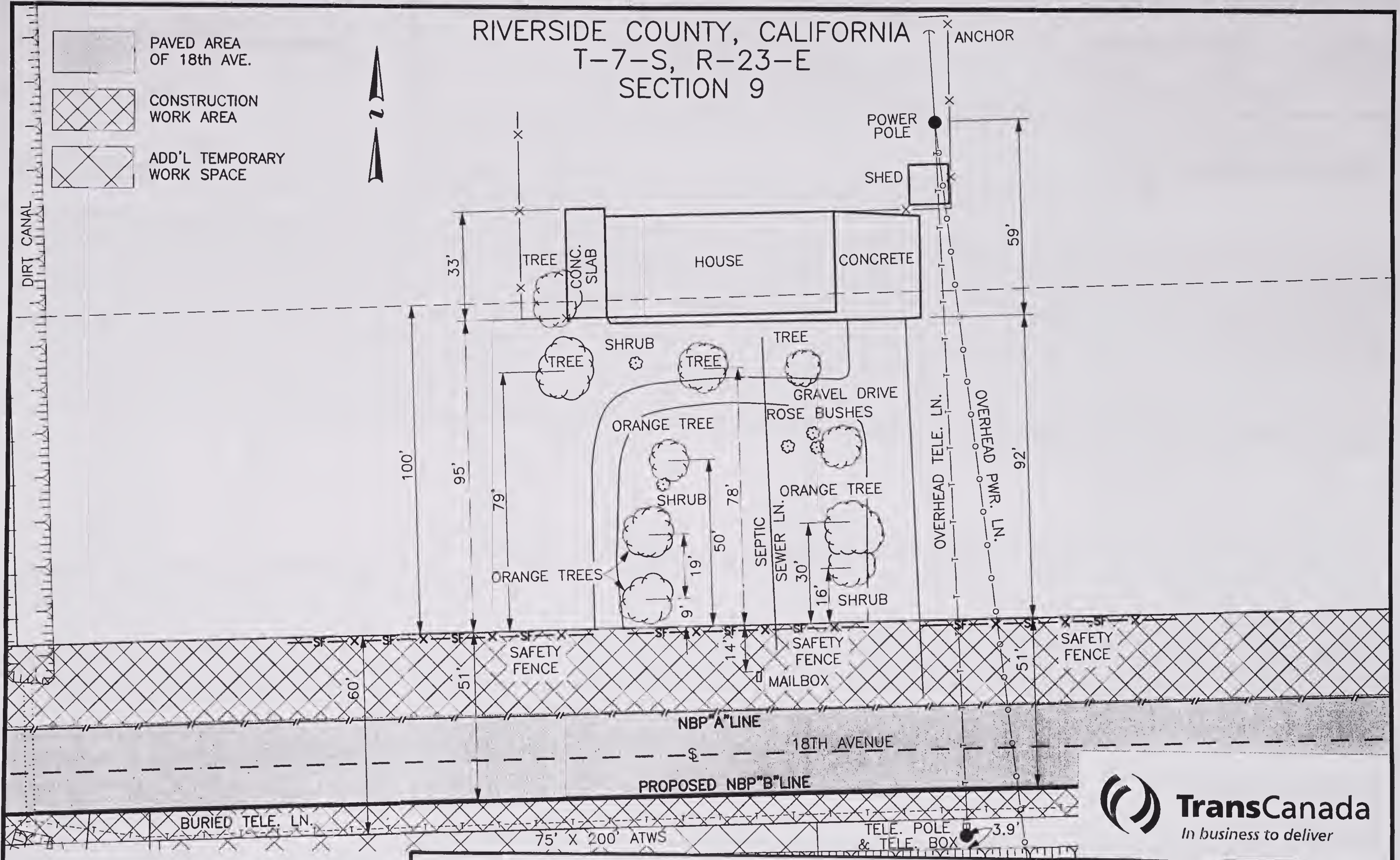
LOCATION - DETAILS
M.P. 3.77 - TRACT CA-RI-0264
9360 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 08-RES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-107	A

4200ESS107 11/04/2005 SJS

paduca : 4200ess107.dwg

Feb 02, 2006 - 9:57 AM



TransCanada
In business to deliver

0 20 40 80
GRAPHIC SCALE

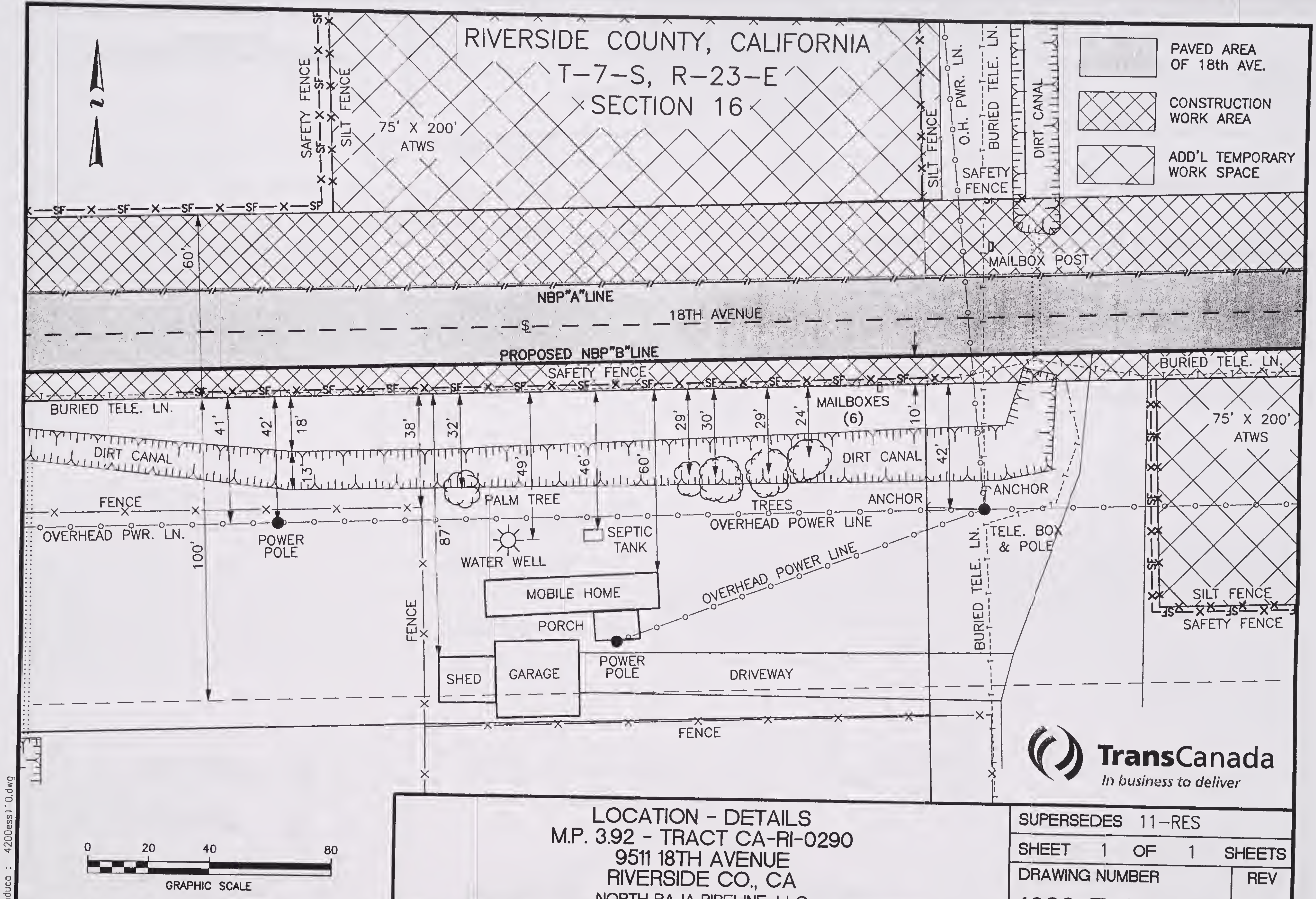
LOCATION - DETAILS
M.P. 3.84 - TRACT CA-RI-0280
9400 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 09-RES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-108	A

4200ESS108 11/04/2005 SJS

paduca : 4200ess108.dwg

Feb 02, 2006 - 9:57 AM



TransCanada
In business to deliver

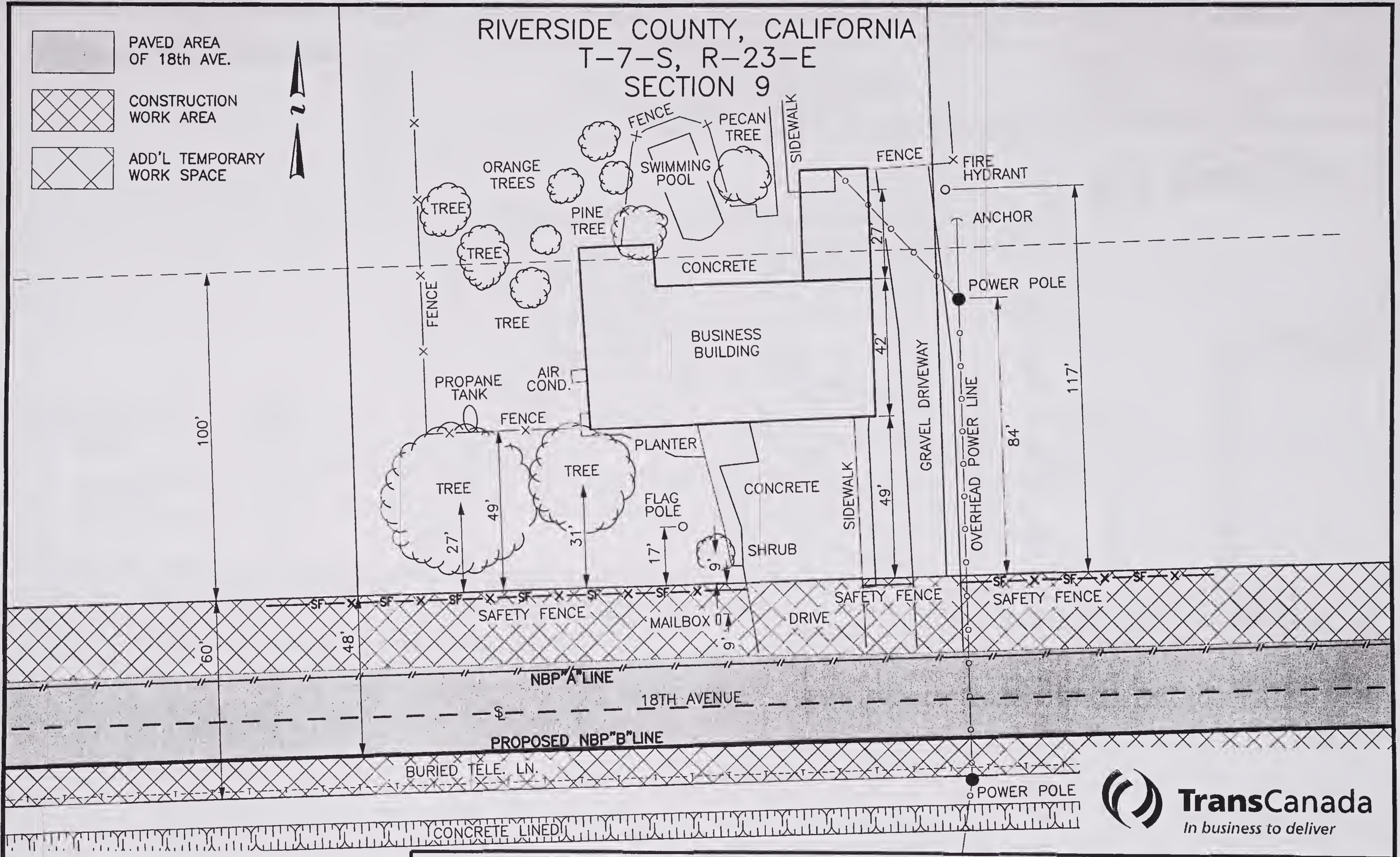
LOCATION - DETAILS
M.P. 3.92 - TRACT CA-RI-0290
9511 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 11-RES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-110	A

4200ESS110 11/07/2005 SJS

paduca : 4200ess1'0.dwg

Feb 02, 2006 - 9:58 AM



TransCanada
In business to deliver

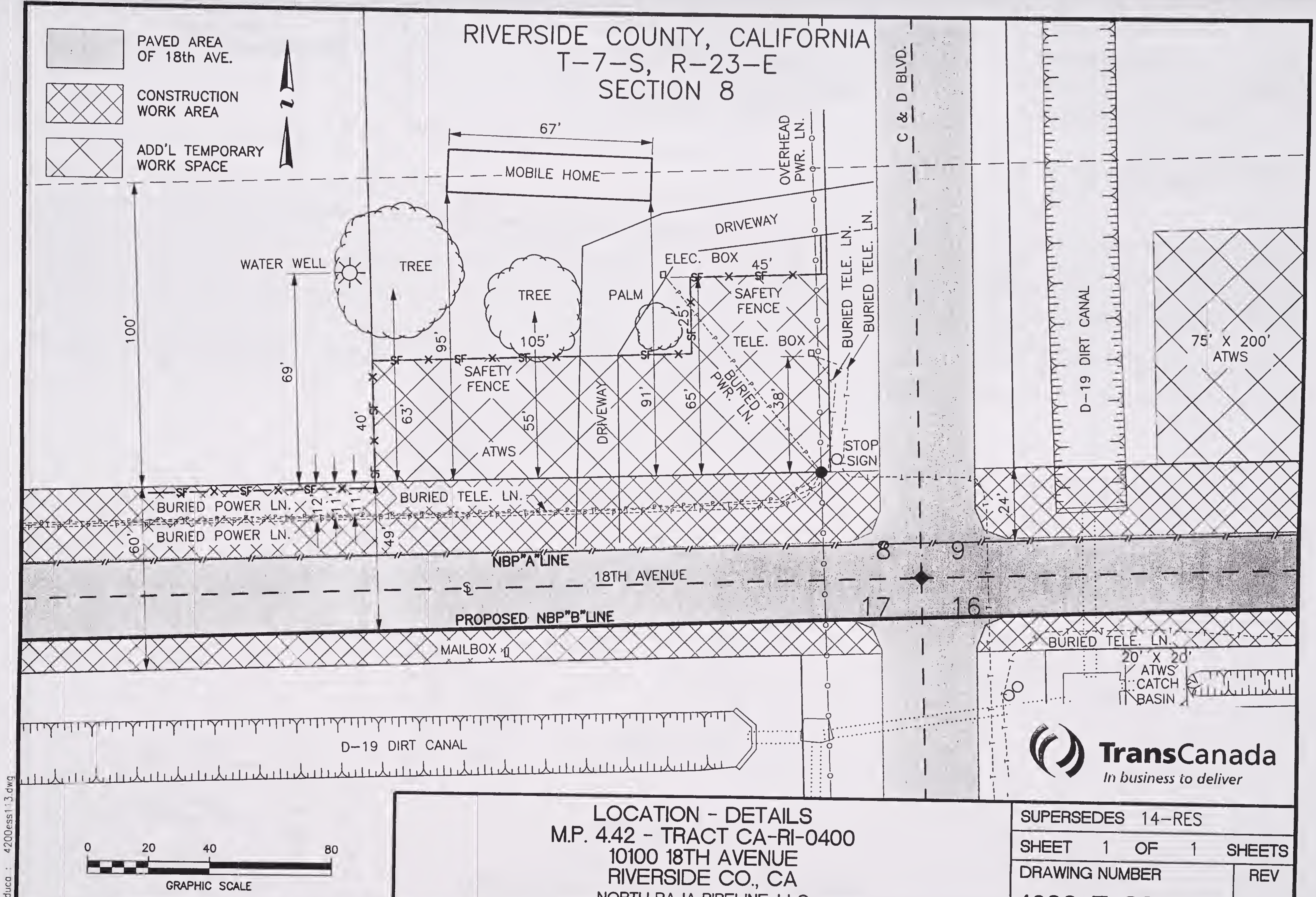
LOCATION - DETAILS
M.P. 4.23 - TRACT CA-RI-0340
9826 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	13-BUS			
SHEET	1	OF	1	SHEETS
DRAWING NUMBER				REV
4200-E-SS-112				A

4200ESS112 11/07/2005 SJS

Feb 02, 2006 - 9:59 AM

paduca : 4200ess112.dwg



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 4.42 - TRACT CA-RI-0400
10100 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

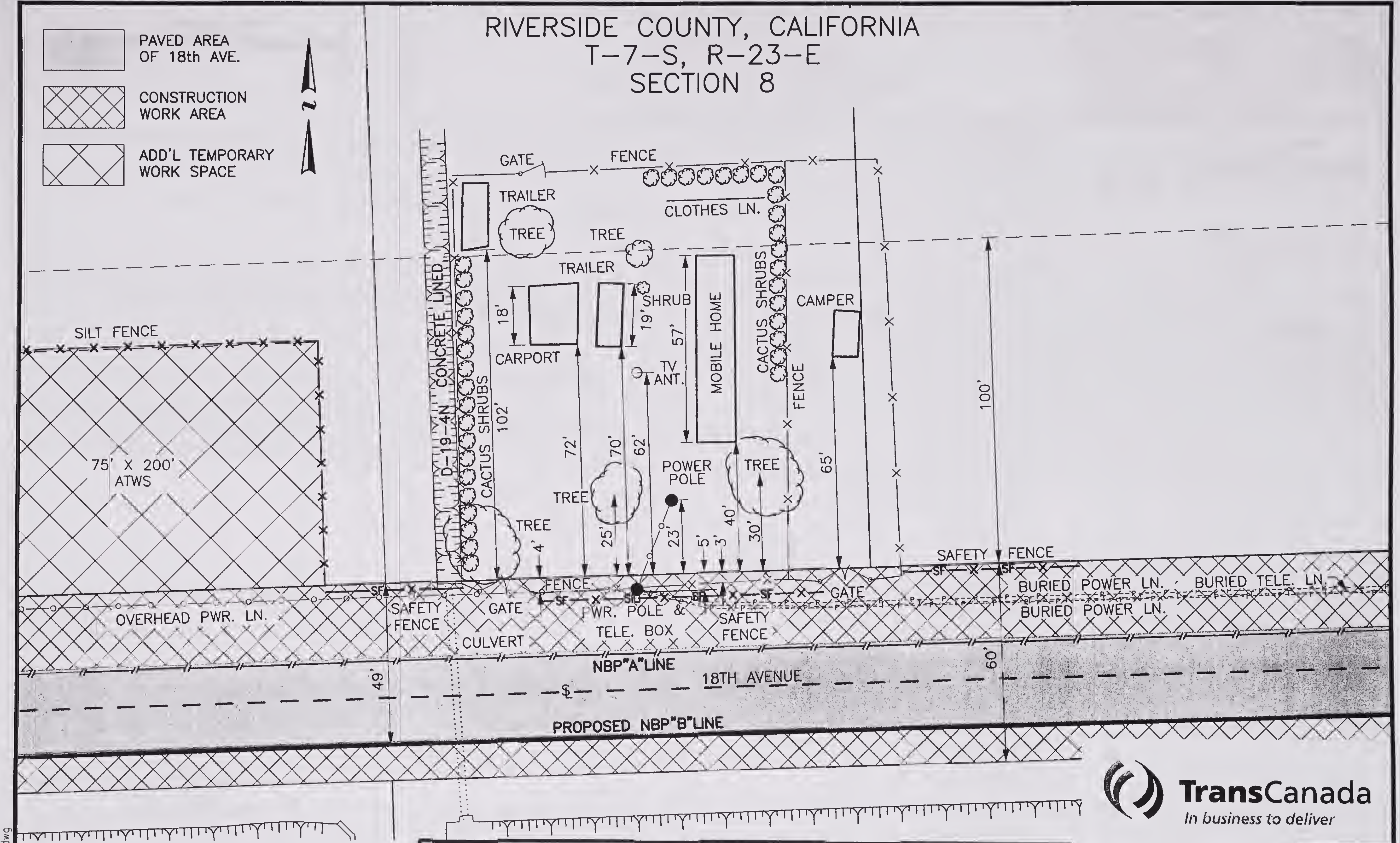
SUPERSEDES 14-RES
SHEET 1 OF 1 SHEETS
DRAWING NUMBER 4200-E-SS-113
REV A

4200ESS113 11/07/2005 SJS

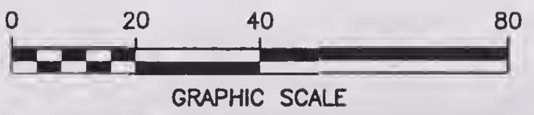
paduca : 4200ess113.dwg

Feb 02, 2006 - 9:59 AM

RIVERSIDE COUNTY, CALIFORNIA
T-7-S, R-23-E
SECTION 8



TransCanada
In business to deliver



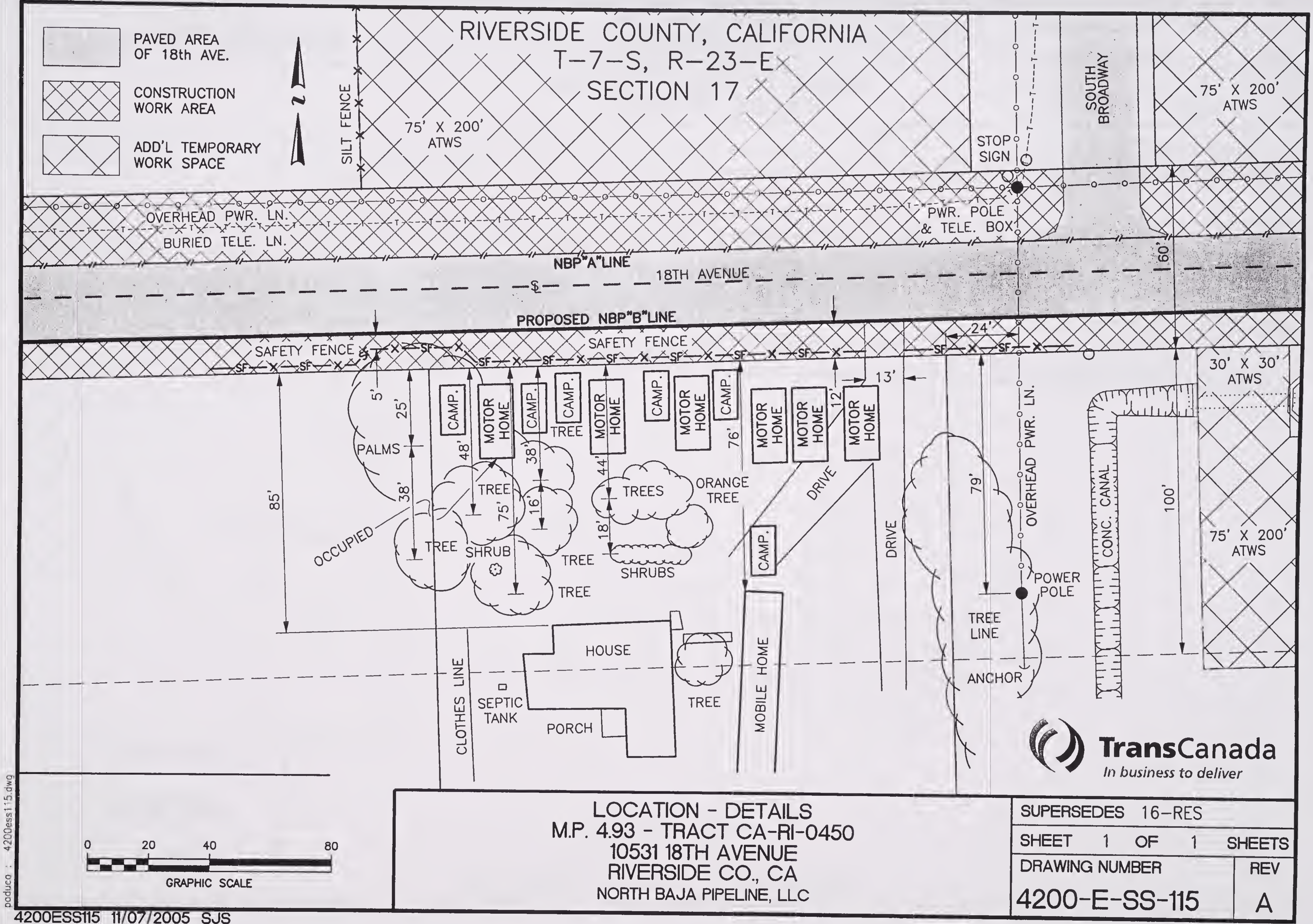
LOCATION - DETAILS
M.P. 4.64 - TRACT CA-RI-0440
10220 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	15-RES			
SHEET	1	OF	1	SHEETS
DRAWING NUMBER				REV
4200-E-SS-114				A

paduca : 4200ess114.dwg

4200ESS114 11/07/2005 SJS

Feb 02, 2006 - 10:00 AM



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 4.93 - TRACT CA-RI-0450
10531 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

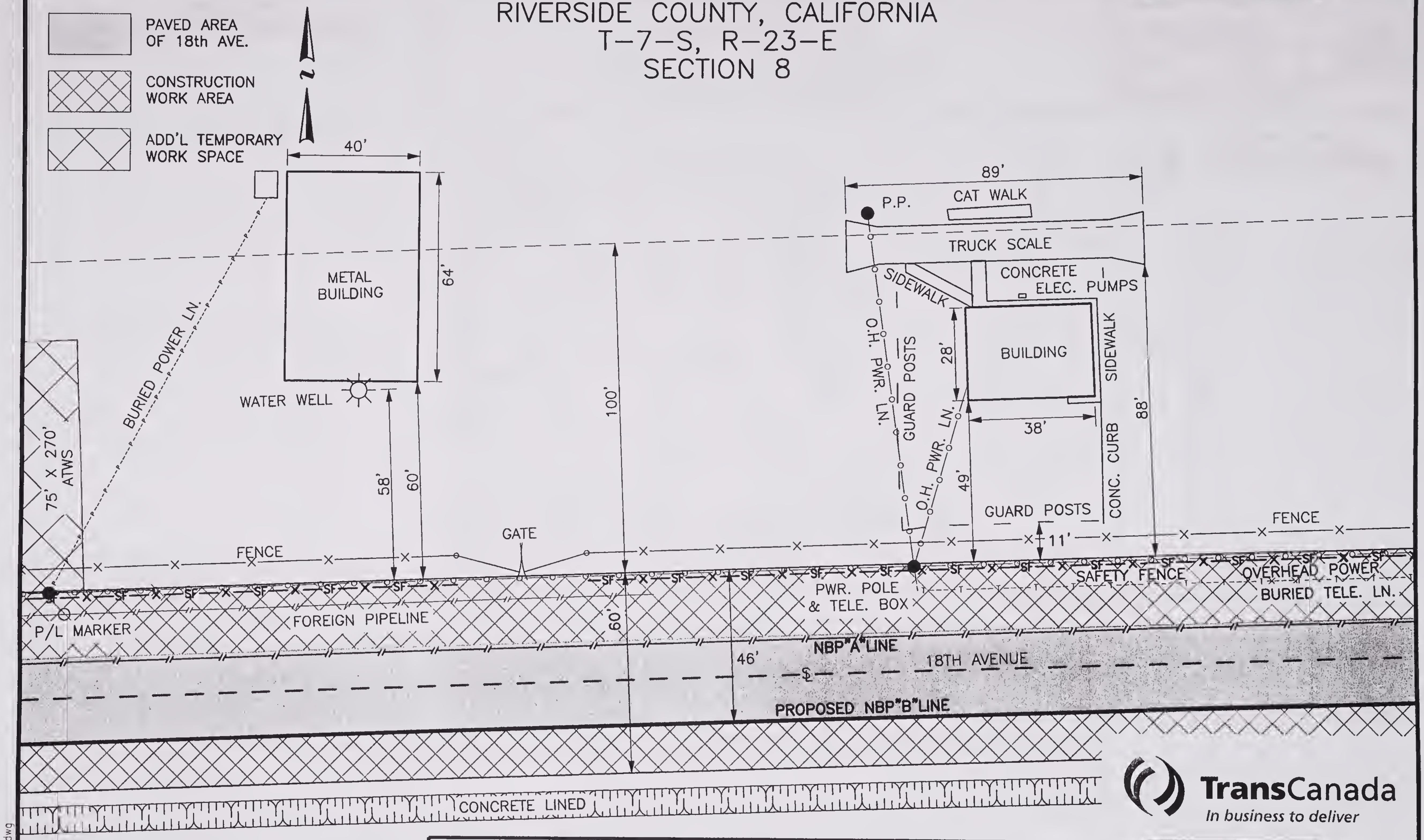
SUPERSEDES 16-RES
SHEET 1 OF 1 SHEETS
DRAWING NUMBER 4200-E-SS-115
REV A

4200ESS115 11/07/2005 SJS

poduca : 4200ess115.dwg

Feb 02, 2006 - 10:00 AM

RIVERSIDE COUNTY, CALIFORNIA
T-7-S, R-23-E
SECTION 8



0 20 40 80

GRAPHIC SCALE

TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 5.25 - TRACT CA-RI-0500
18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

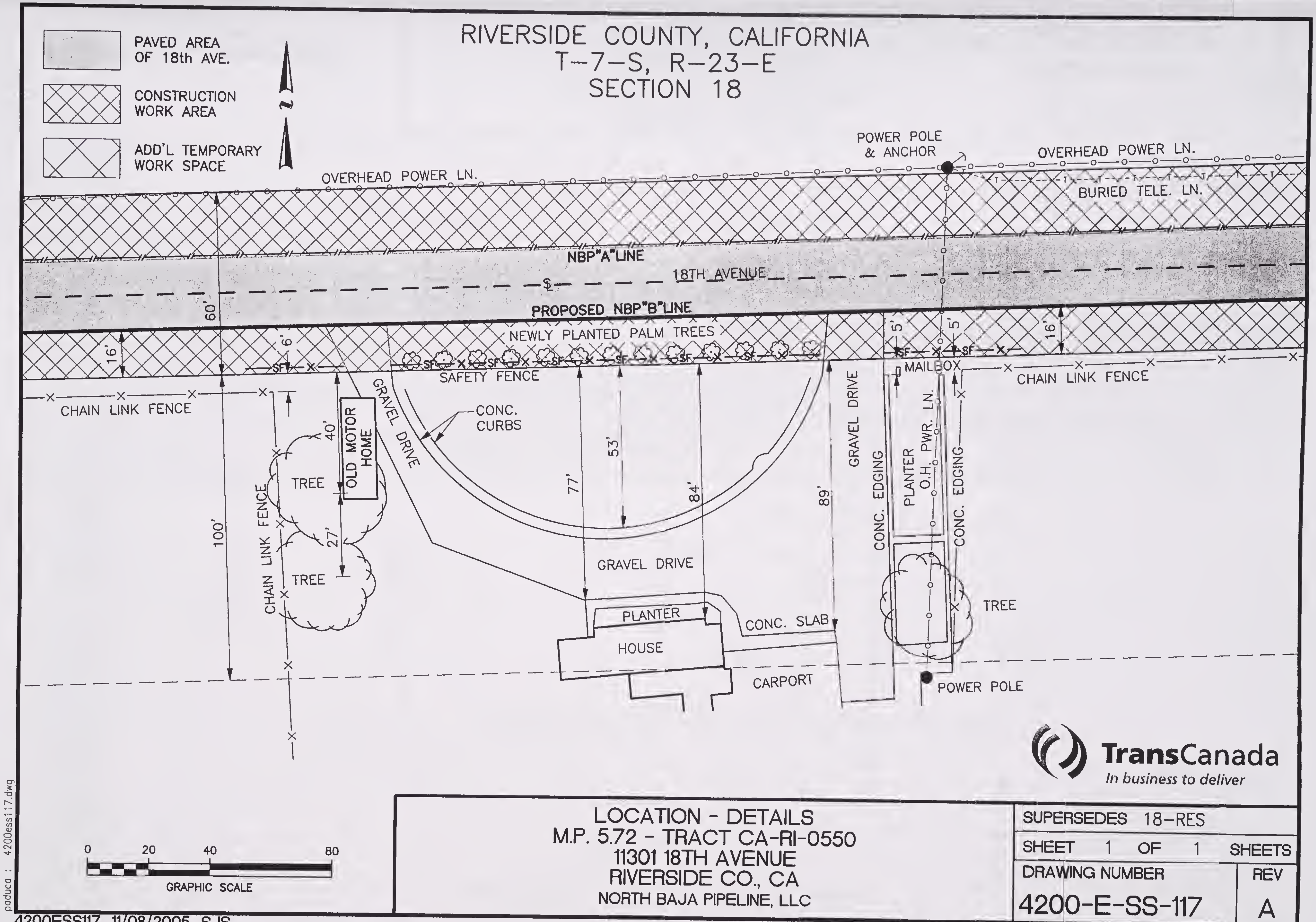
SUPERSEDES 17-BUS			
SHEET 1 OF 1 SHEETS			
DRAWING NUMBER			REV
4200-E-SS-116			A

4200ESS116 11/08/2005 SJS

Feb 02, 2006 - 10:01 AM

poduca : 4200ess1'6.dwg

RIVERSIDE COUNTY, CALIFORNIA
T-7-S, R-23-E
SECTION 18



TransCanada
In business to deliver

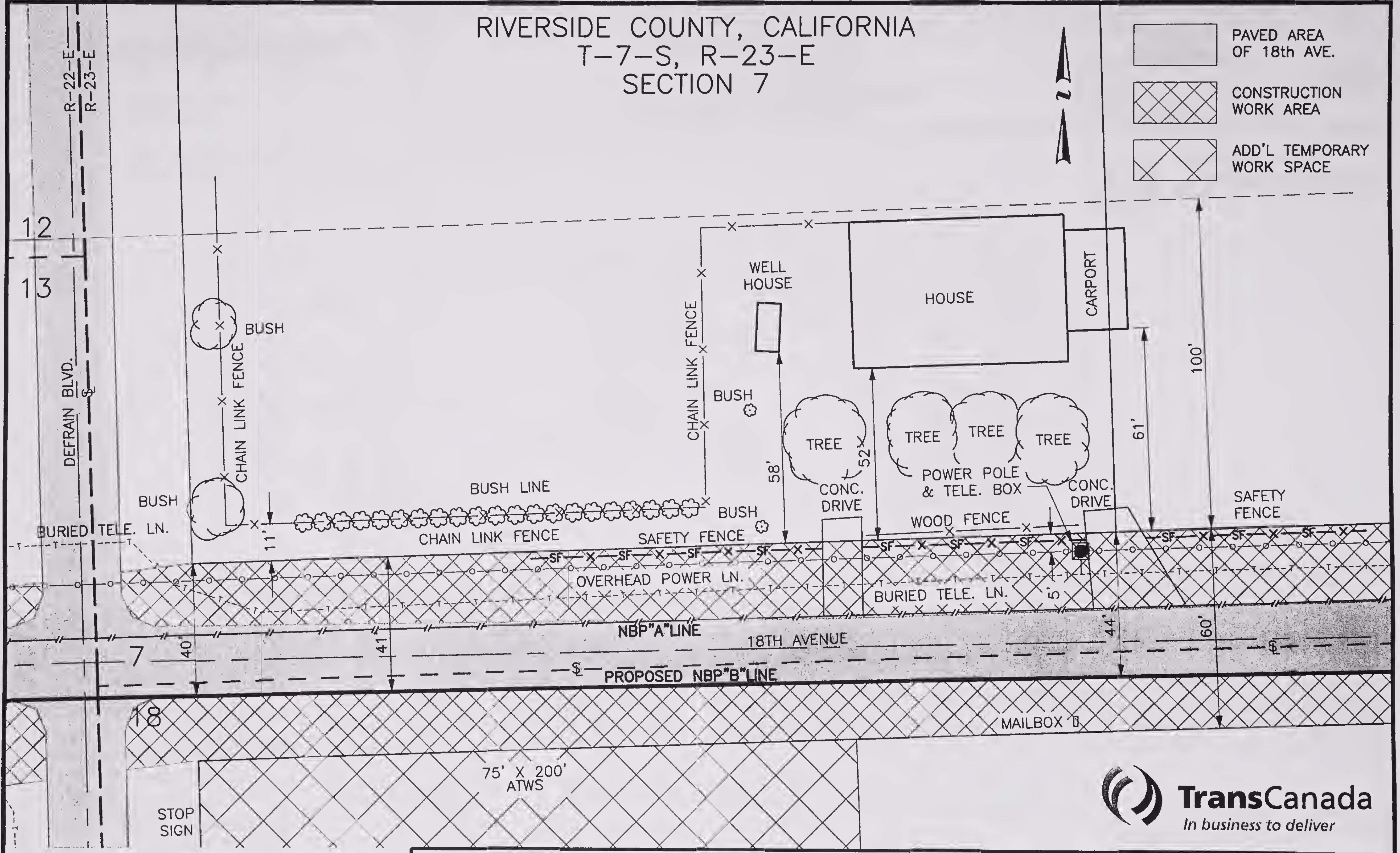
LOCATION - DETAILS
M.P. 5.72 - TRACT CA-RI-0550
11301 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 18-RES			
SHEET	1 OF	1	SHEETS
DRAWING NUMBER			REV
4200-E-SS-117			A

4200ESS117 11/08/2005 SJS

paduca : 4200ess117.dwg

Feb 02, 2006 - 10:01 AM



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 6.38 - TRACT CA-RI-0604
11960 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 20-RES				
SHEET	1	OF	1	SHEETS
DRAWING NUMBER				REV
4200-E-SS-120				A

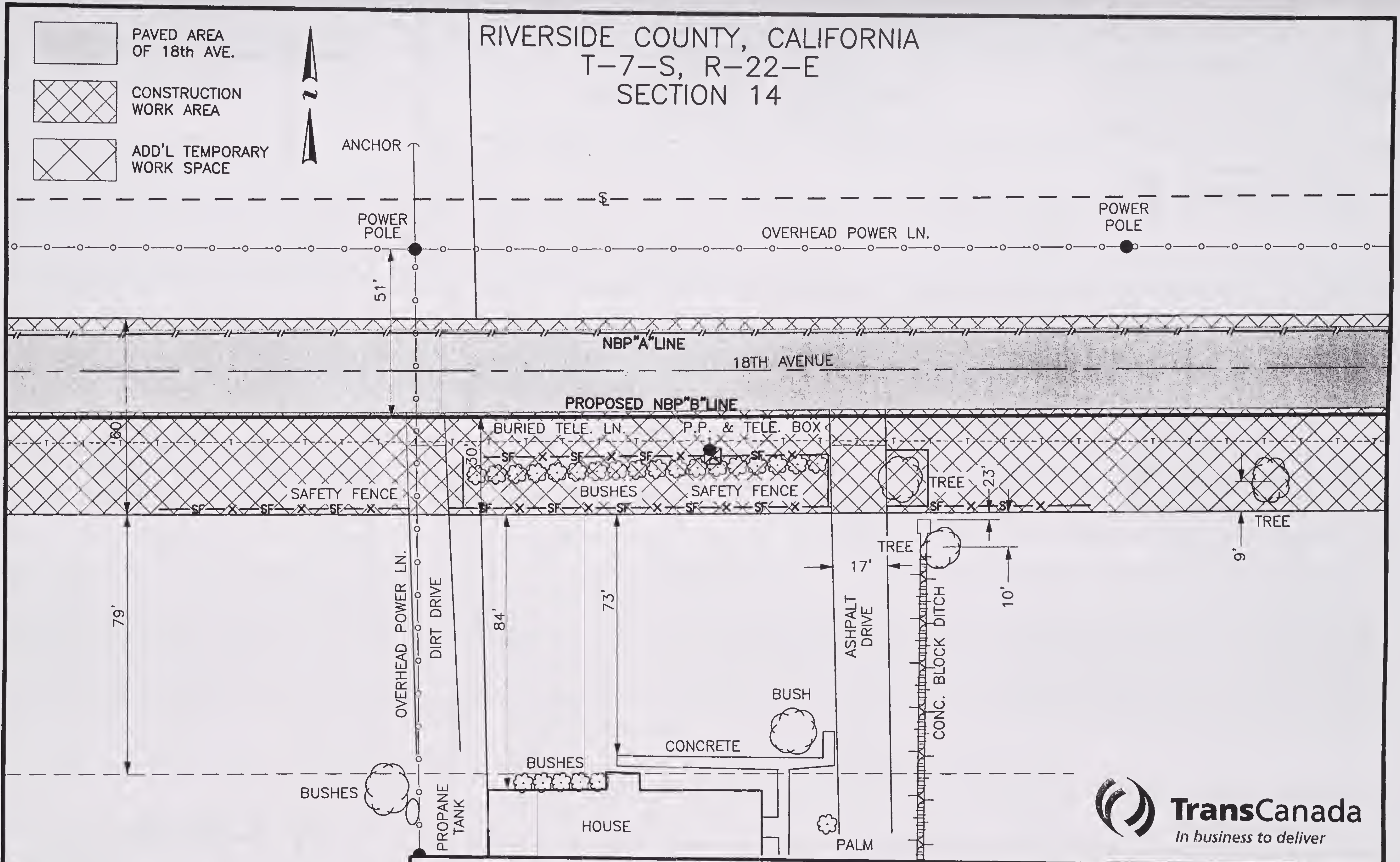
4200ESS120 11/08/2005 SJS

paduca : 4200ess120.dwg

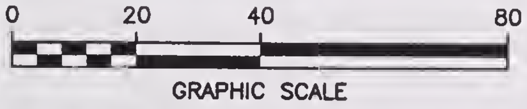
Feb 02, 2006 - 10:03 AM

RIVERSIDE COUNTY, CALIFORNIA
T-7-S, R-22-E
SECTION 14

- ▭ PAVED AREA OF 18th AVE.
- ▩ CONSTRUCTION WORK AREA
- ▨ ADD'L TEMPORARY WORK SPACE



TransCanada
In business to deliver



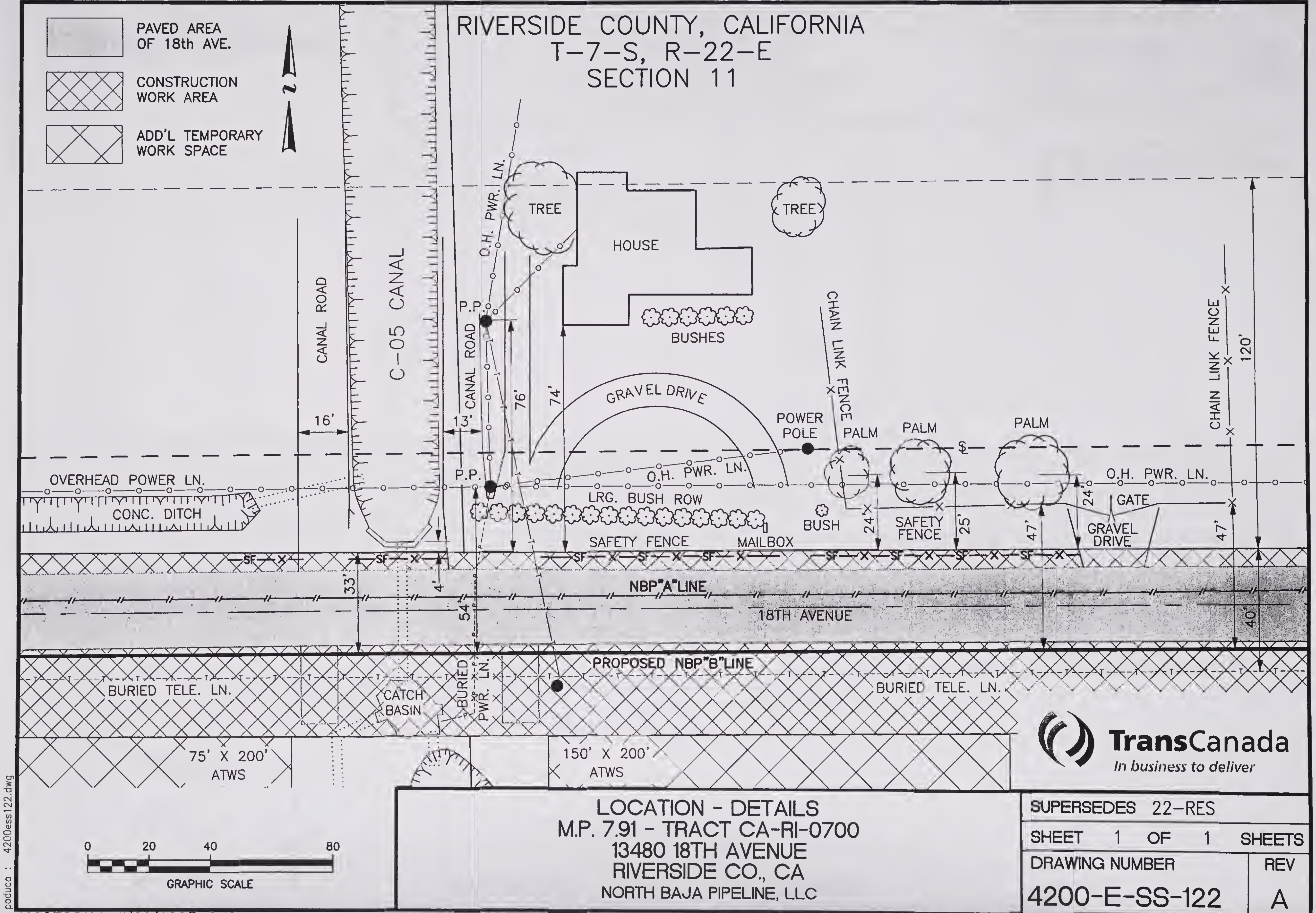
LOCATION - DETAILS
M.P. 7.66 - TRACT CA-RI-0670
12401 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 21-RES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-121	A

4200ESS121 11/08/2005 SJS

poduca : 4200ess121.dwg

Feb 02, 2006 - 10:04 AM



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 7.91 - TRACT CA-RI-0700
13480 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 22-RES

SHEET 1 OF 1 SHEETS

DRAWING NUMBER 4200-E-SS-122

REV A

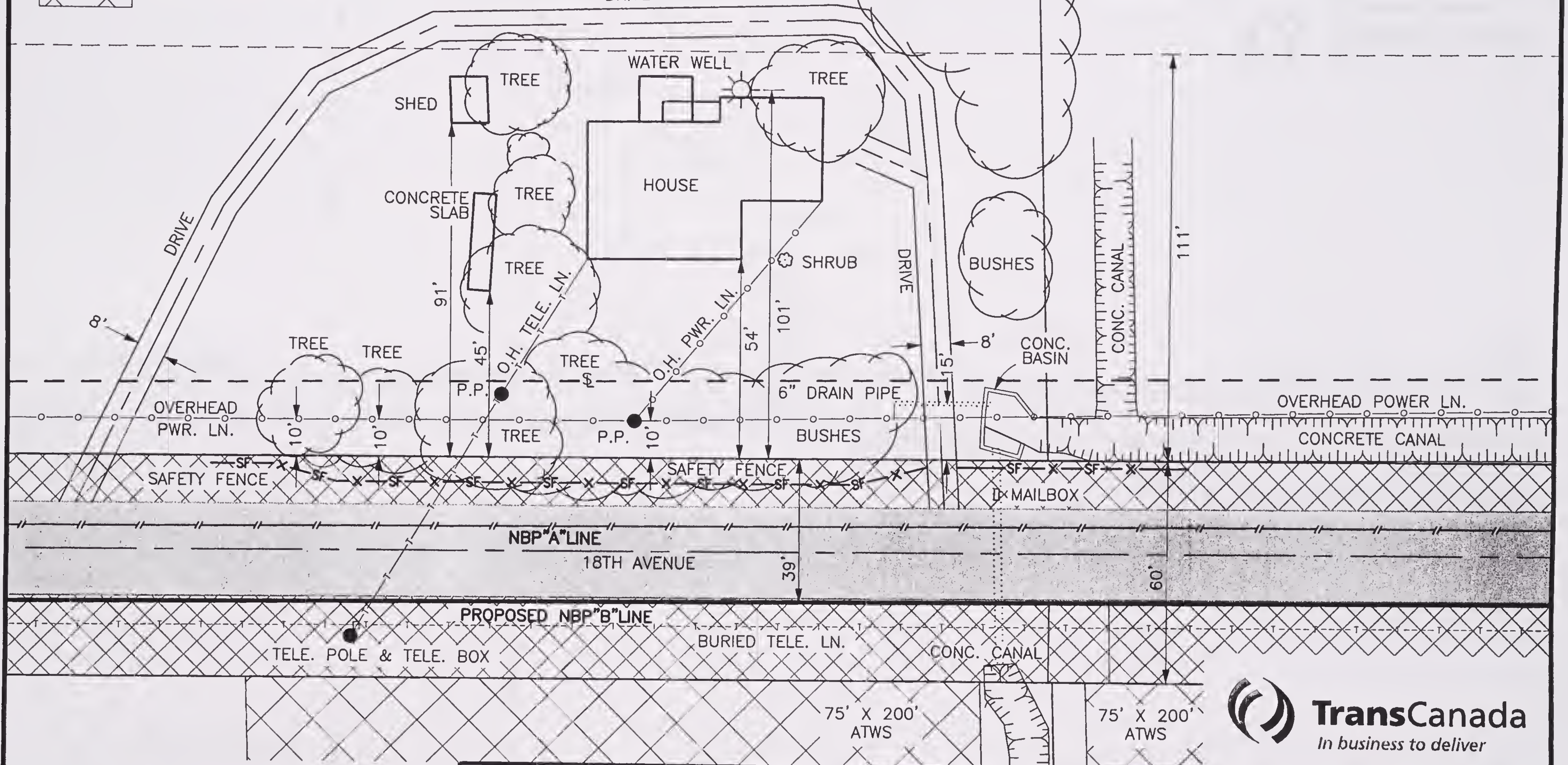
4200ESS122 11/09/2005 SJS

paduca : 4200ess122.dwg

Feb 02, 2006 - 10:04 AM

▨	PAVED AREA OF 18th AVE.
▩	CONSTRUCTION WORK AREA
☒	ADD'L TEMPORARY WORK SPACE

RIVERSIDE COUNTY, CALIFORNIA
T-7-S, R-22-E
SECTION 11



0 20 40 80
GRAPHIC SCALE

TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 8.20 - TRACT CA-RI-0740
13780 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES 23-RES			
SHEET 1 OF 1 SHEETS			
DRAWING NUMBER			REV
4200-E-SS-123			A

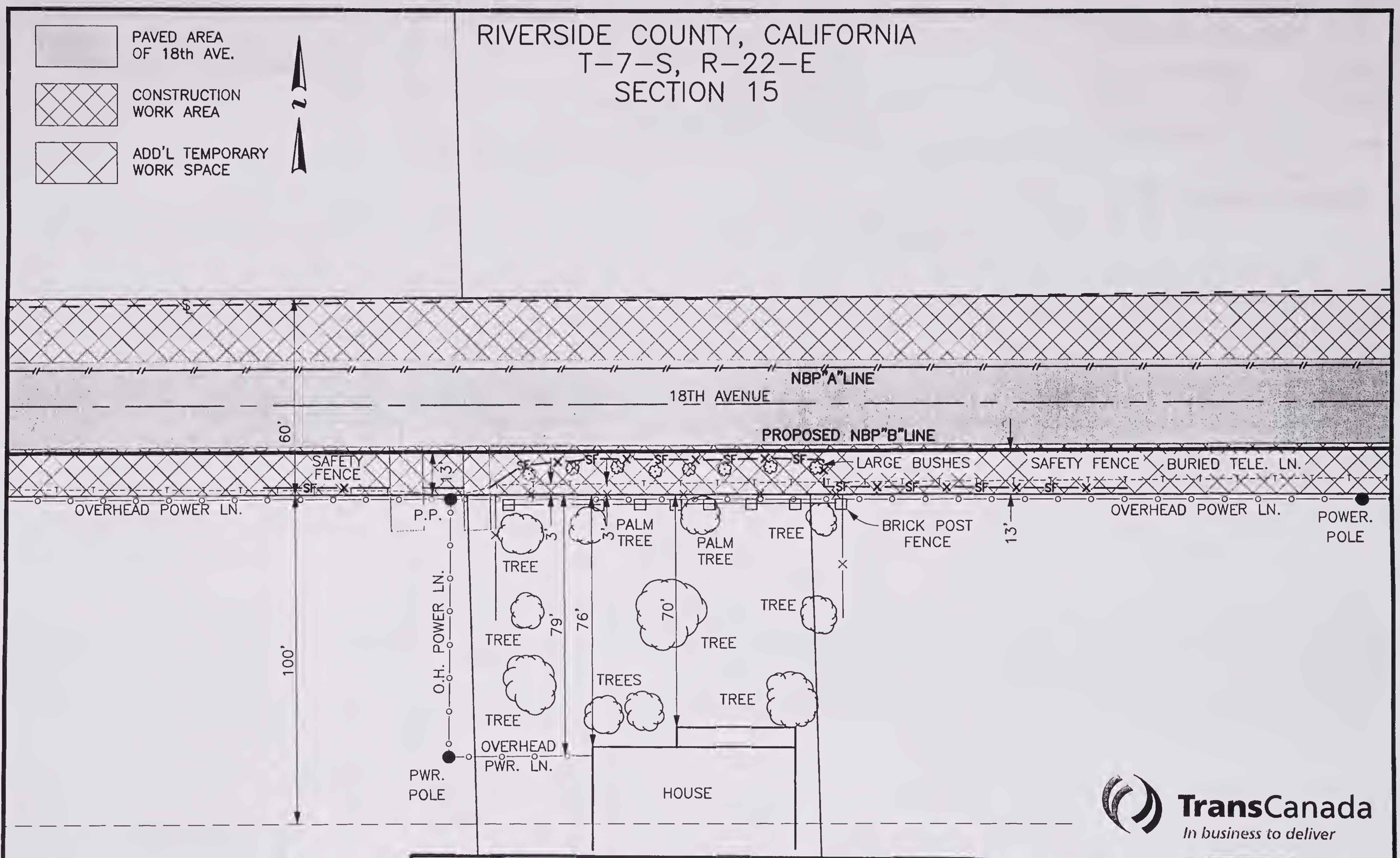
paduca : 4200ess123.dwg

4200ESS123 11/09/2005 SJS

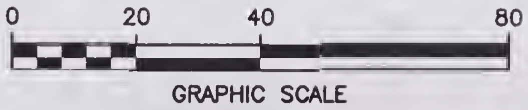
Feb 02, 2006 - 10:05 AM

▒	PAVED AREA OF 18th AVE.
▩	CONSTRUCTION WORK AREA
▨	ADD'L TEMPORARY WORK SPACE

RIVERSIDE COUNTY, CALIFORNIA
T–7–S, R–22–E
SECTION 15



TransCanada
In business to deliver



LOCATION - DETAILS
M.P. 8.66 - TRACT CA-RI-0771
14231 18TH AVENUE
RIVERSIDE CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	24–RES			
SHEET	1	OF	1	SHEETS
DRAWING NUMBER				REV
4200–E–SS–124				A

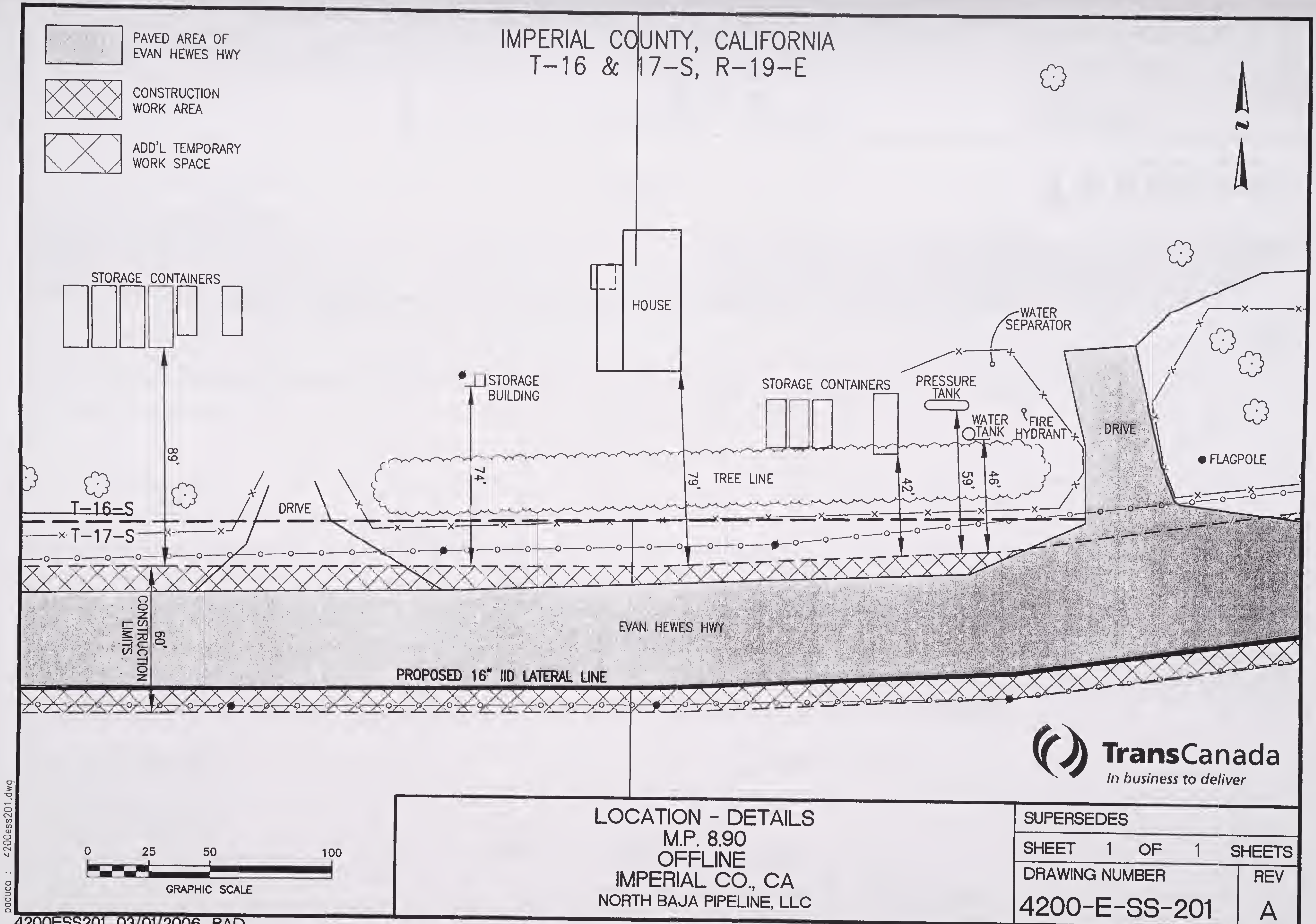
paduca : 4200ess124.dwg

4200ESS124 11/09/2005 SJS

Feb 02, 2006 – 1:34 PM

IID Lateral

IMPERIAL COUNTY, CALIFORNIA
T-16 & 17-S, R-19-E



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 8.90
OFFLINE
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

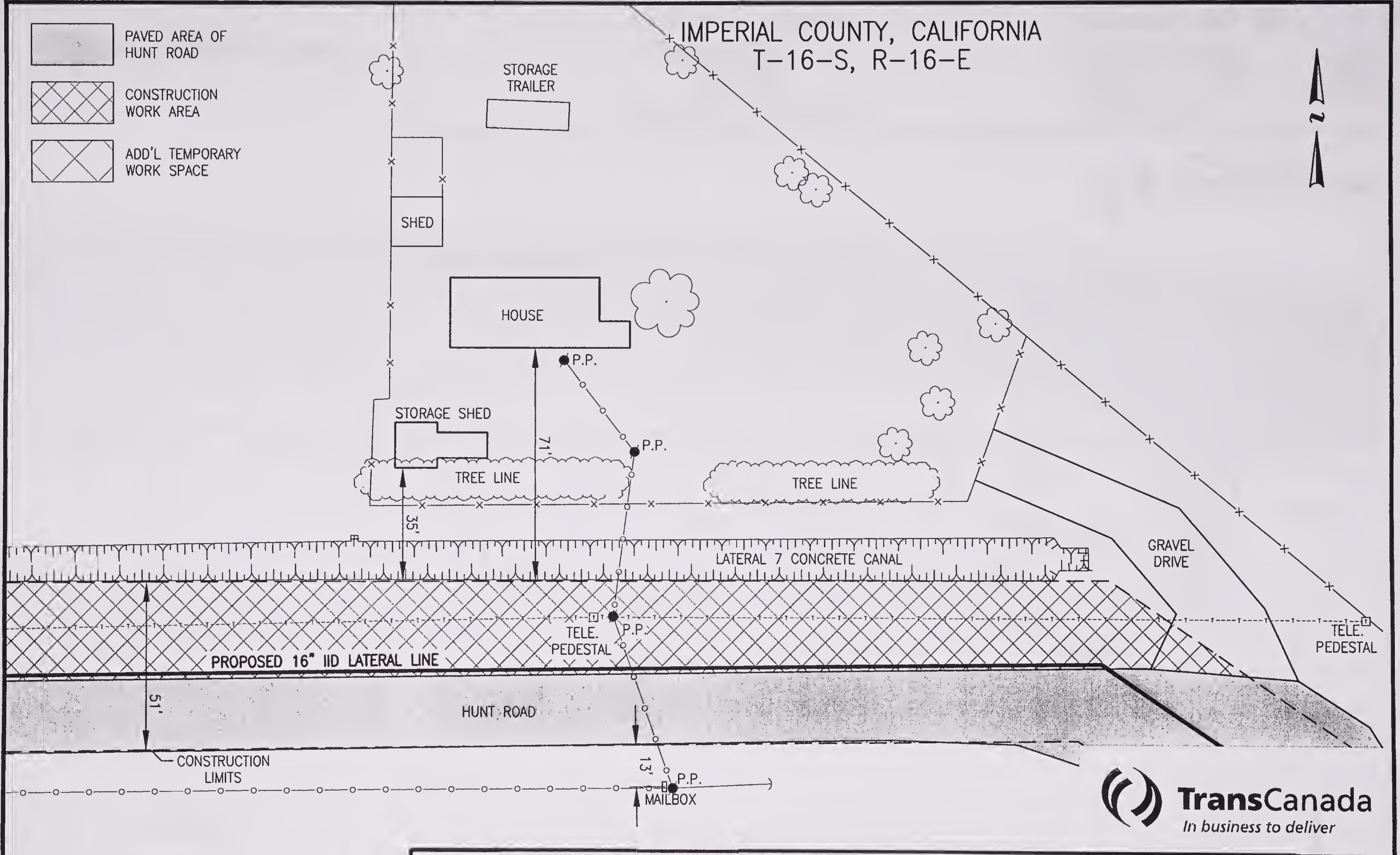
SUPERSEDES
SHEET 1 OF 1 SHEETS
DRAWING NUMBER 4200-E-SS-201
REV A

4200ESS201 03/01/2006 PAD

paduca : 4200ess201.dwg

Mar 10, 2006 - 10:57 PM

IMPERIAL COUNTY, CALIFORNIA
T-16-S, R-16-E



TransCanada
In business to deliver

0 20 40 80
GRAPHIC SCALE

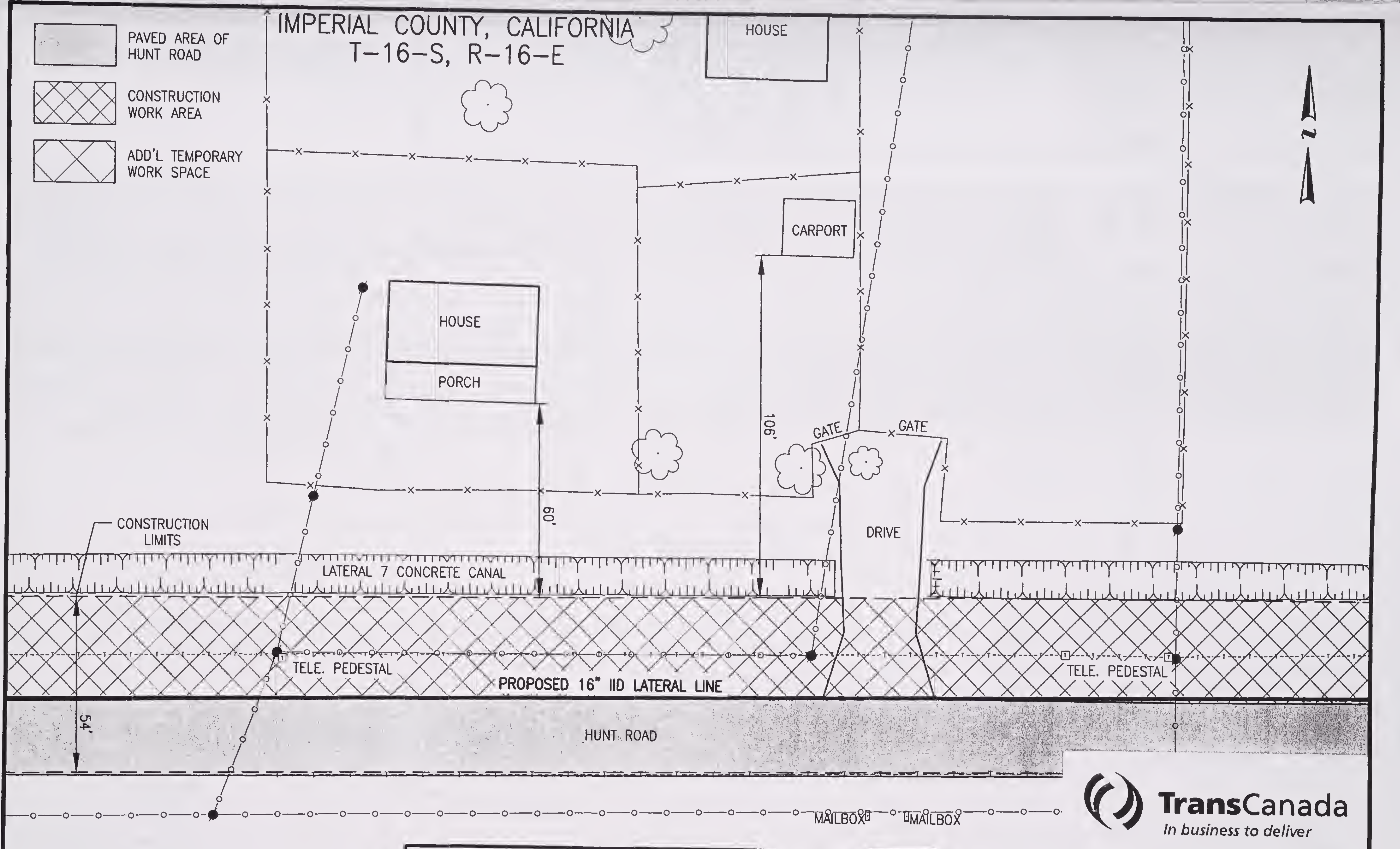
LOCATION - DETAILS
M.P. 27.84
TRACT CA-IM-1460
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-202	A

paduca : 4200ess202.dwg

4200ESS202 03/03/2006 PAD

Mar 10, 2006 - 10:57 PM



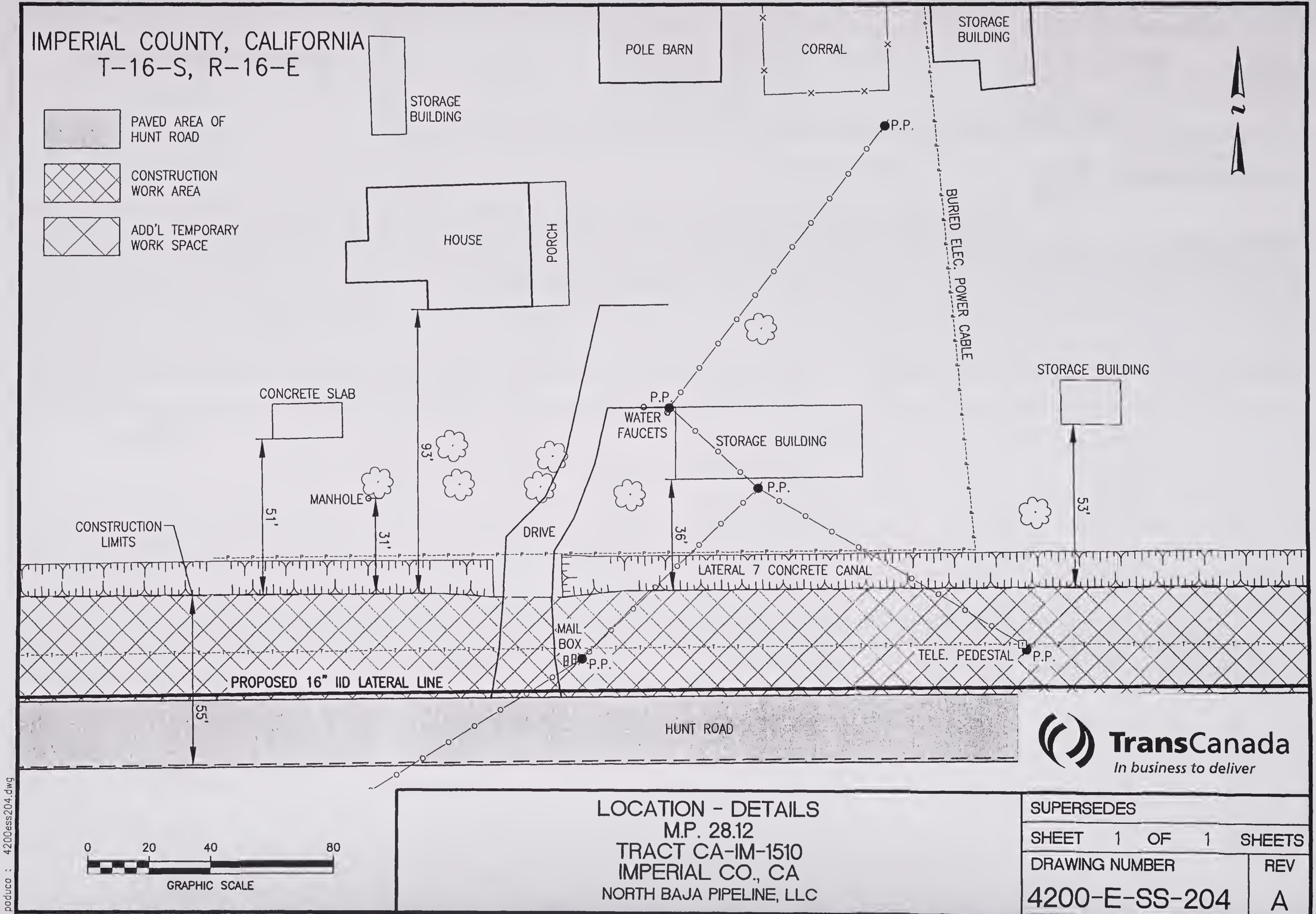
LOCATION - DETAILS
M.P. 27.94
TRACT CA-IM-1480
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-203	A

paduca : 4200ess203.dwg

4200ESS203 03/03/2006 PAD

Mar 10, 2006 – 10:57 PM



TransCanada
In business to deliver

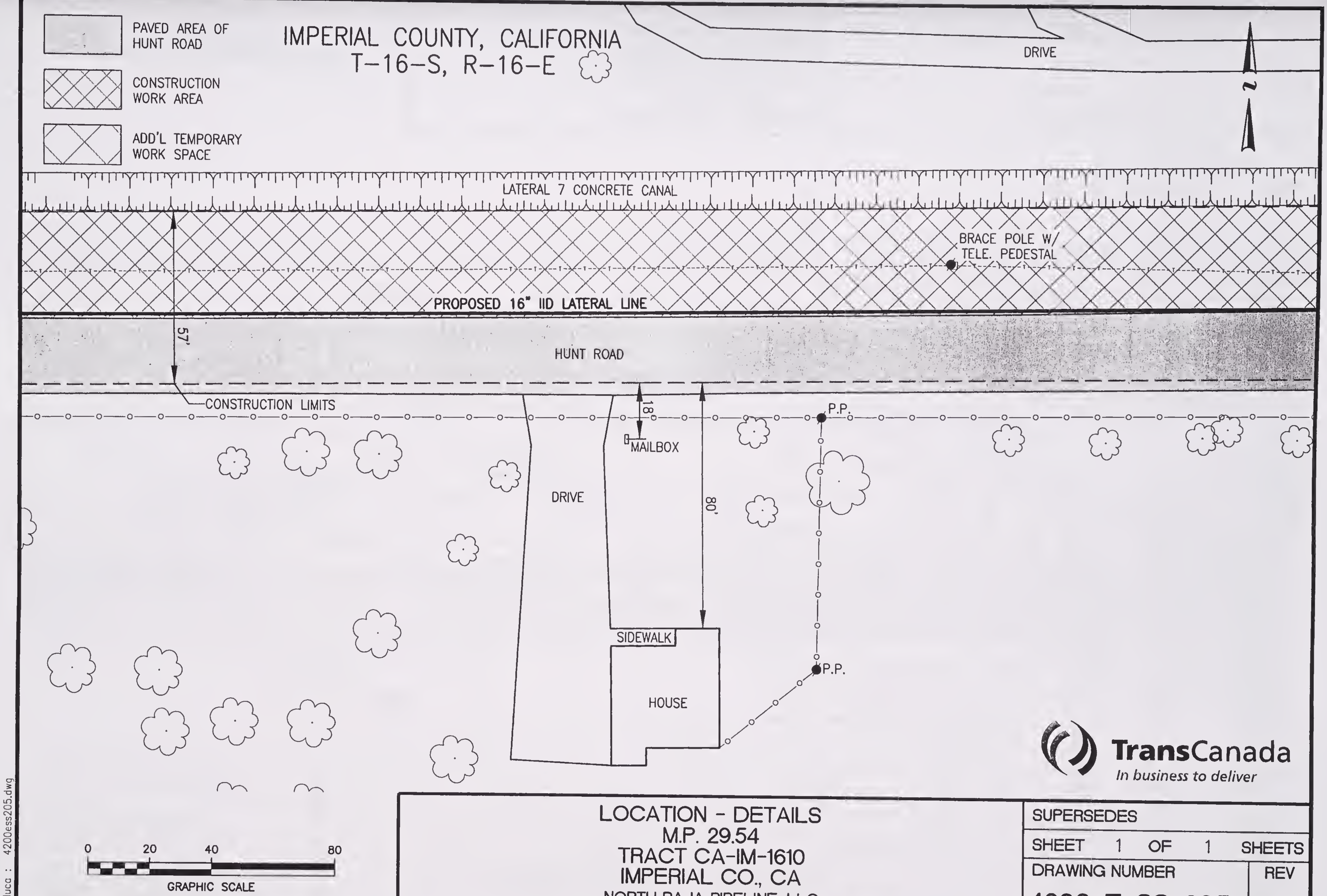
LOCATION - DETAILS
M.P. 28.12
TRACT CA-IM-1510
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES				
SHEET	1	OF	1	SHEETS
DRAWING NUMBER				REV
4200-E-SS-204				A

4200ESS204 03/03/2006 PAD

Mar 10, 2006 - 10:57 PM

IMPERIAL COUNTY, CALIFORNIA
T-16-S, R-16-E



TransCanada
In business to deliver

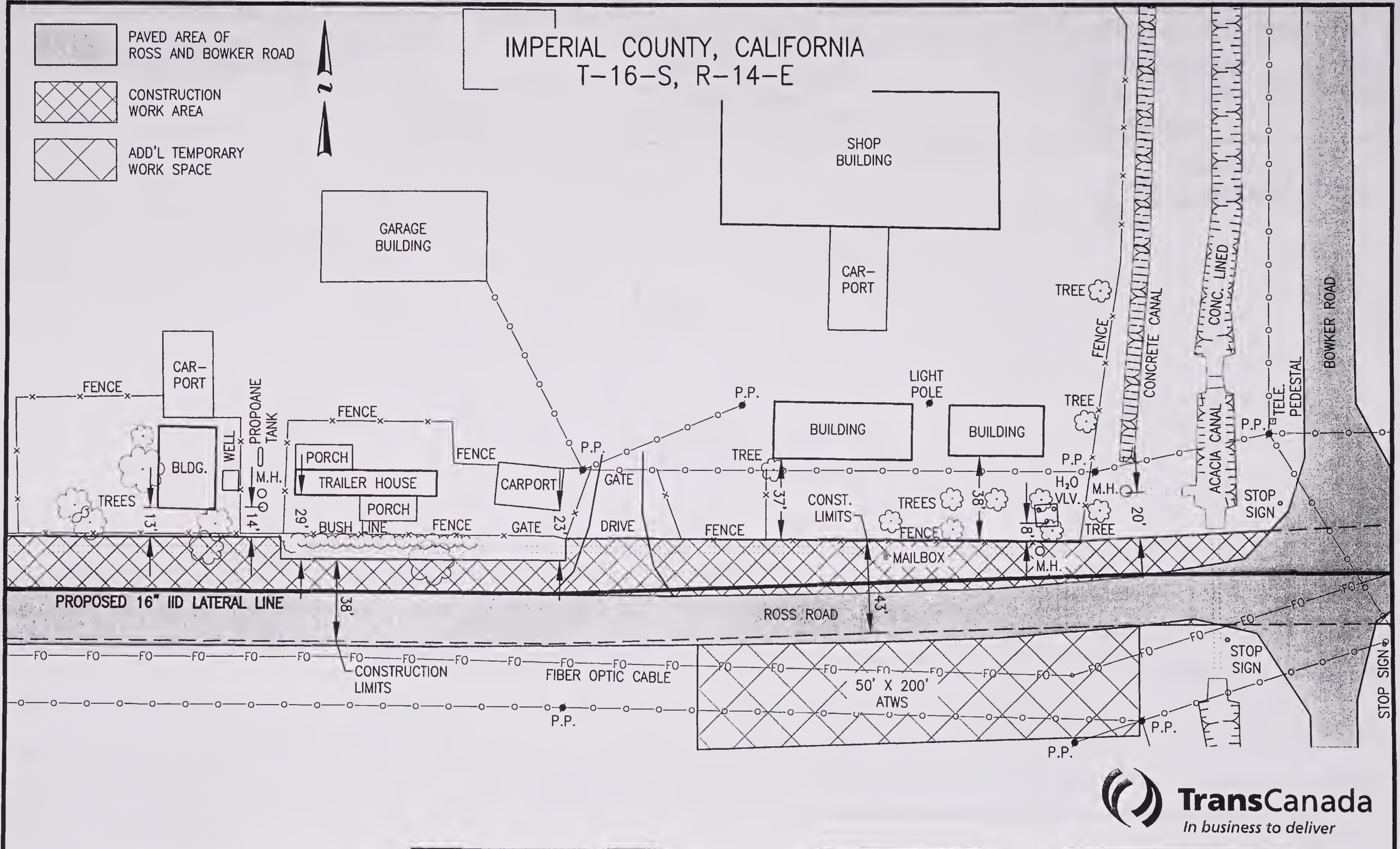
LOCATION - DETAILS
M.P. 29.54
TRACT CA-IM-1610
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-205	A

4200ESS205 03/03/2006 PAD

paduca : 4200ess205.dwg

Mar 10, 2006 - 10:58 PM



TransCanada
In business to deliver

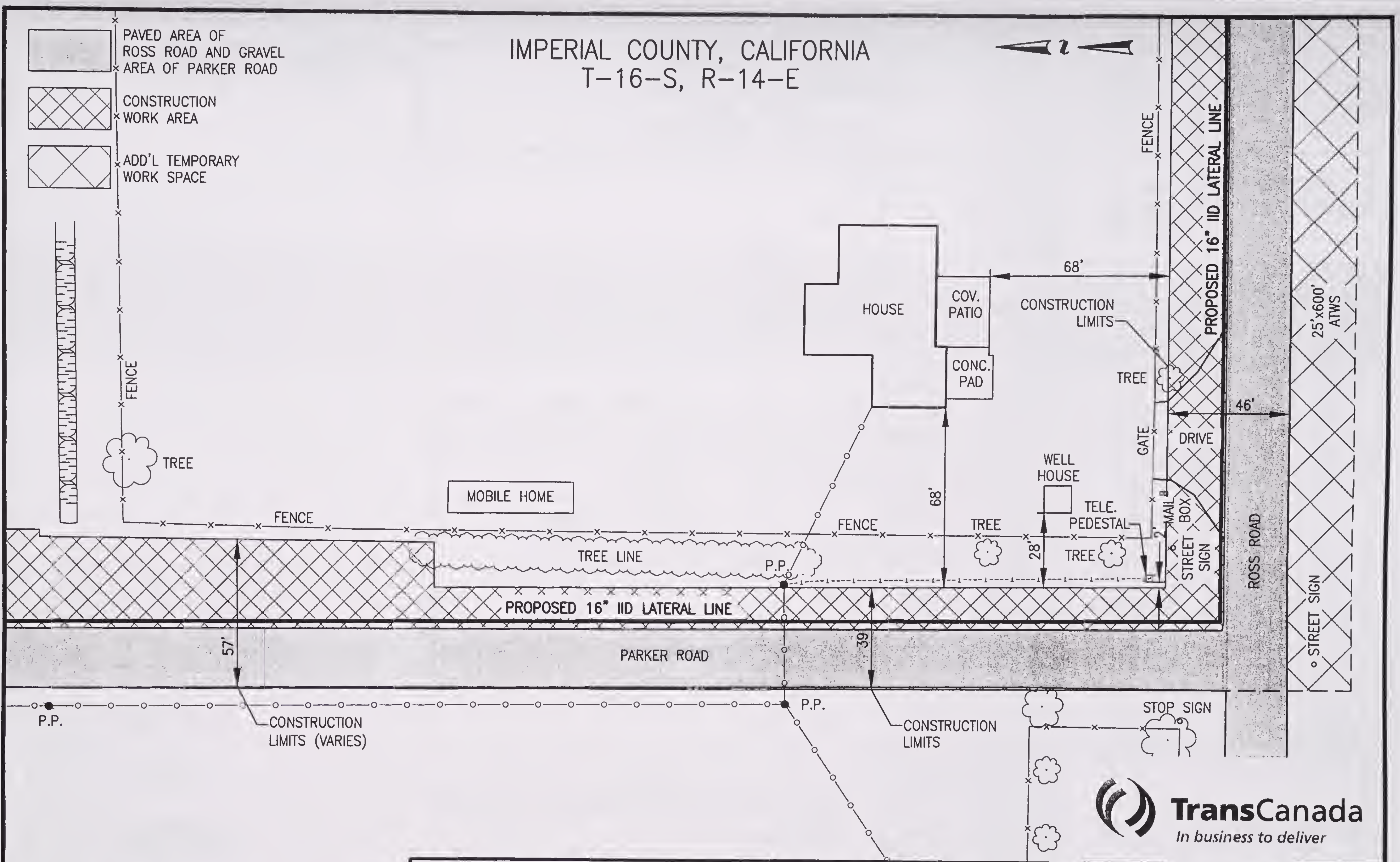
LOCATION - DETAILS
M.P. 40.44
TRACT CA-IM-2220
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-207	A

4200ESS207 03/03/2006 PAD

Mar 10, 2006 - 10:58 PM

paduca : 4200ess207.dwg



TransCanada
In business to deliver

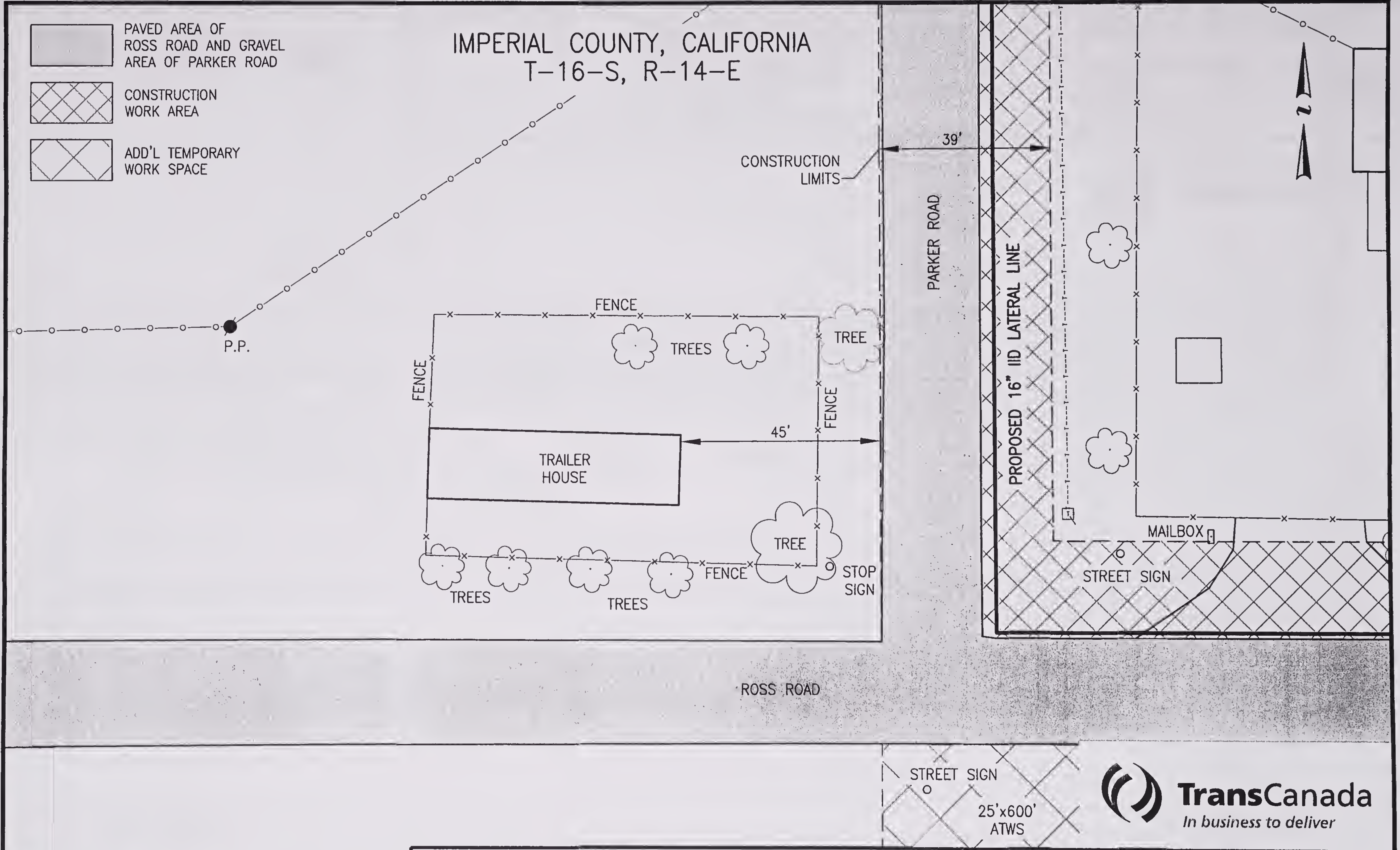
LOCATION - DETAILS
M.P. 41.40
TRACT CA-IM-2260
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES				
SHEET	1	OF	1	SHEETS
DRAWING NUMBER				REV
4200-E-SS-209				A

4200ESS209 03/03/2006 PAD

Mar 10, 2006 - 10:59 PM

paduca : 4200ess209.dwg



TransCanada
In business to deliver

0 15 30 60
GRAPHIC SCALE

LOCATION - DETAILS
M.P. 41.42
TRACT CA-IM-2270
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

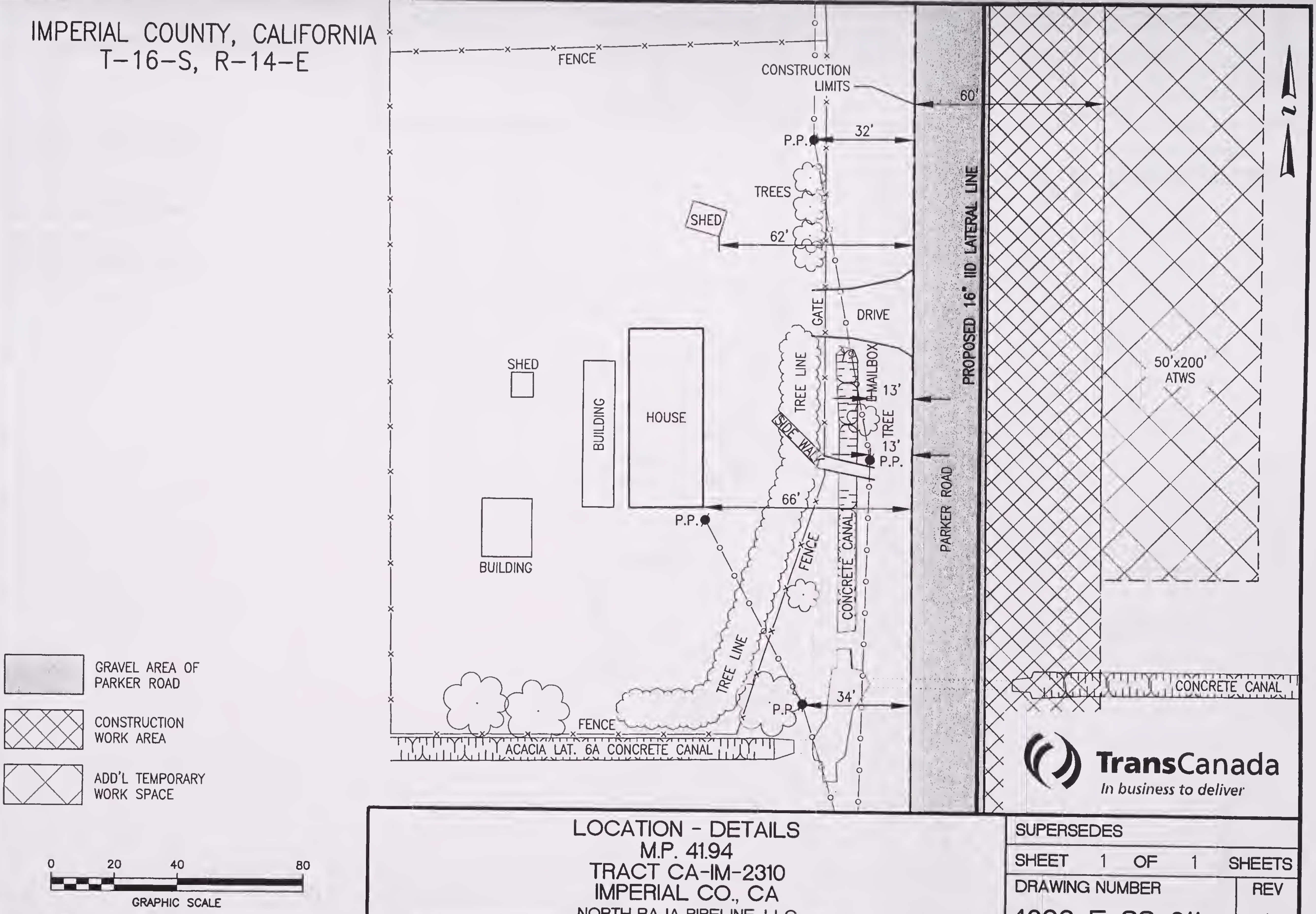
SUPERSEDES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-210	A

poduca : 4200ess210.dwg

4200ESS210 03/03/2006 PAD

Mar 10, 2006 - 10:59 PM

IMPERIAL COUNTY, CALIFORNIA
T-16-S, R-14-E



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 41.94
TRACT CA-IM-2310
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

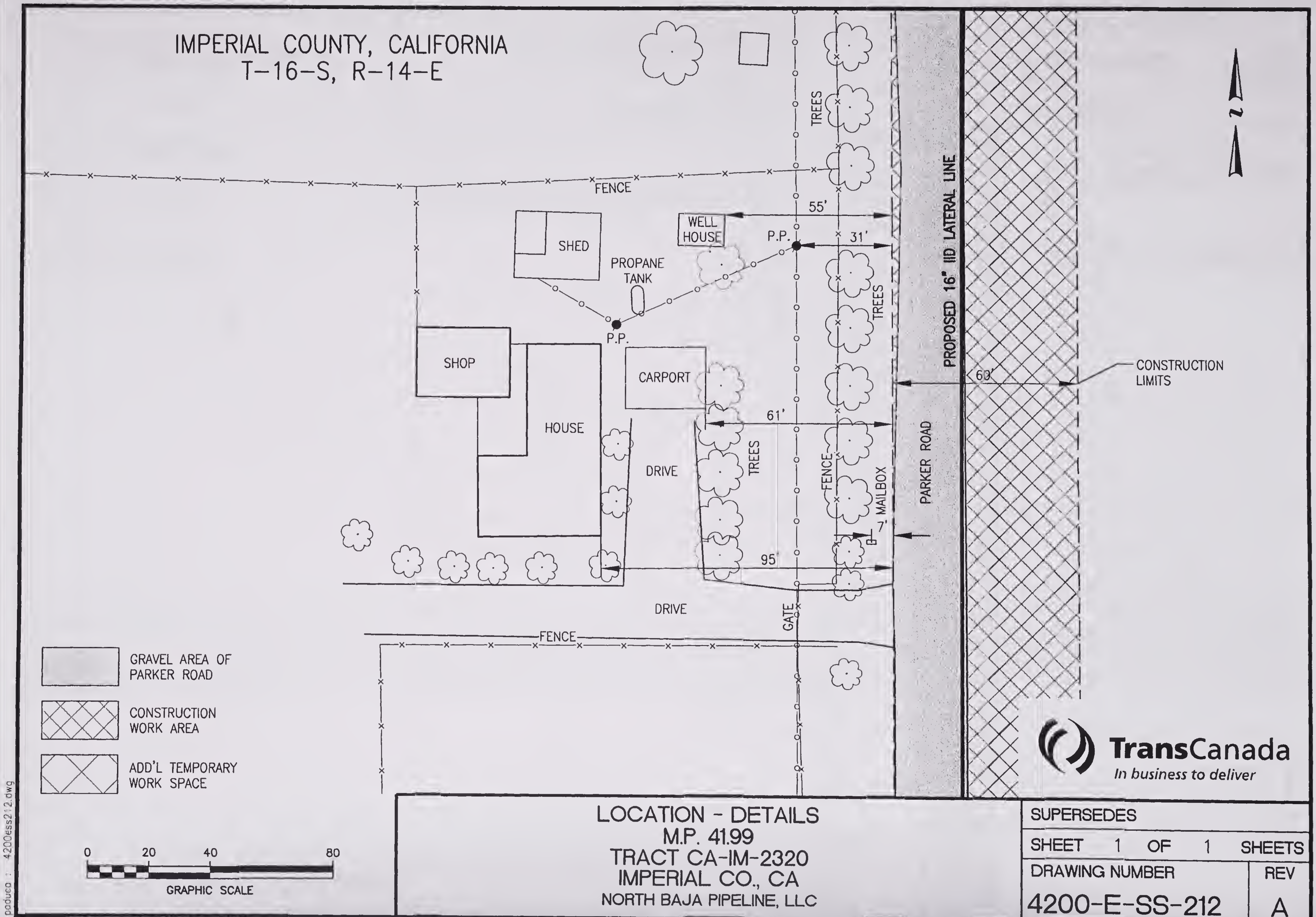
SUPERSEDES				
SHEET	1	OF	1	SHEETS
DRAWING NUMBER				REV
4200-E-SS-211				A

Mar 10, 2006 - 10:59 PM

4200ESS211 03/03/2006 PAD

paduco : 4200ess211.dwg

IMPERIAL COUNTY, CALIFORNIA
T-16-S, R-14-E



TransCanada
In business to deliver

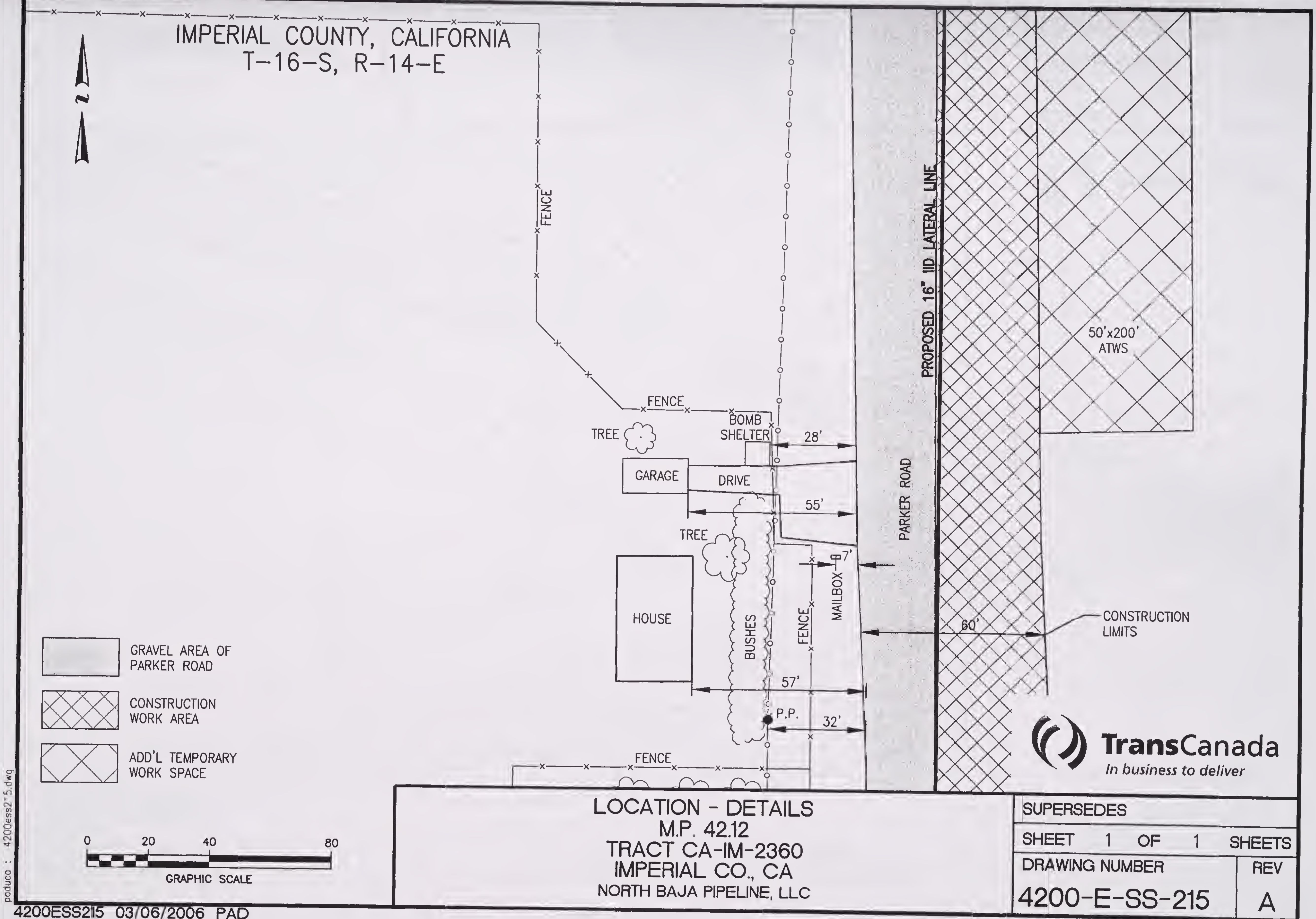
LOCATION - DETAILS
M.P. 41.99
TRACT CA-IM-2320
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
4200-E-SS-212	A

4200ESS212 03/06/2006 PAD

paduca : 4200ess212.dwg

Mar 10, 2006 - 11:00 PM



TransCanada
In business to deliver

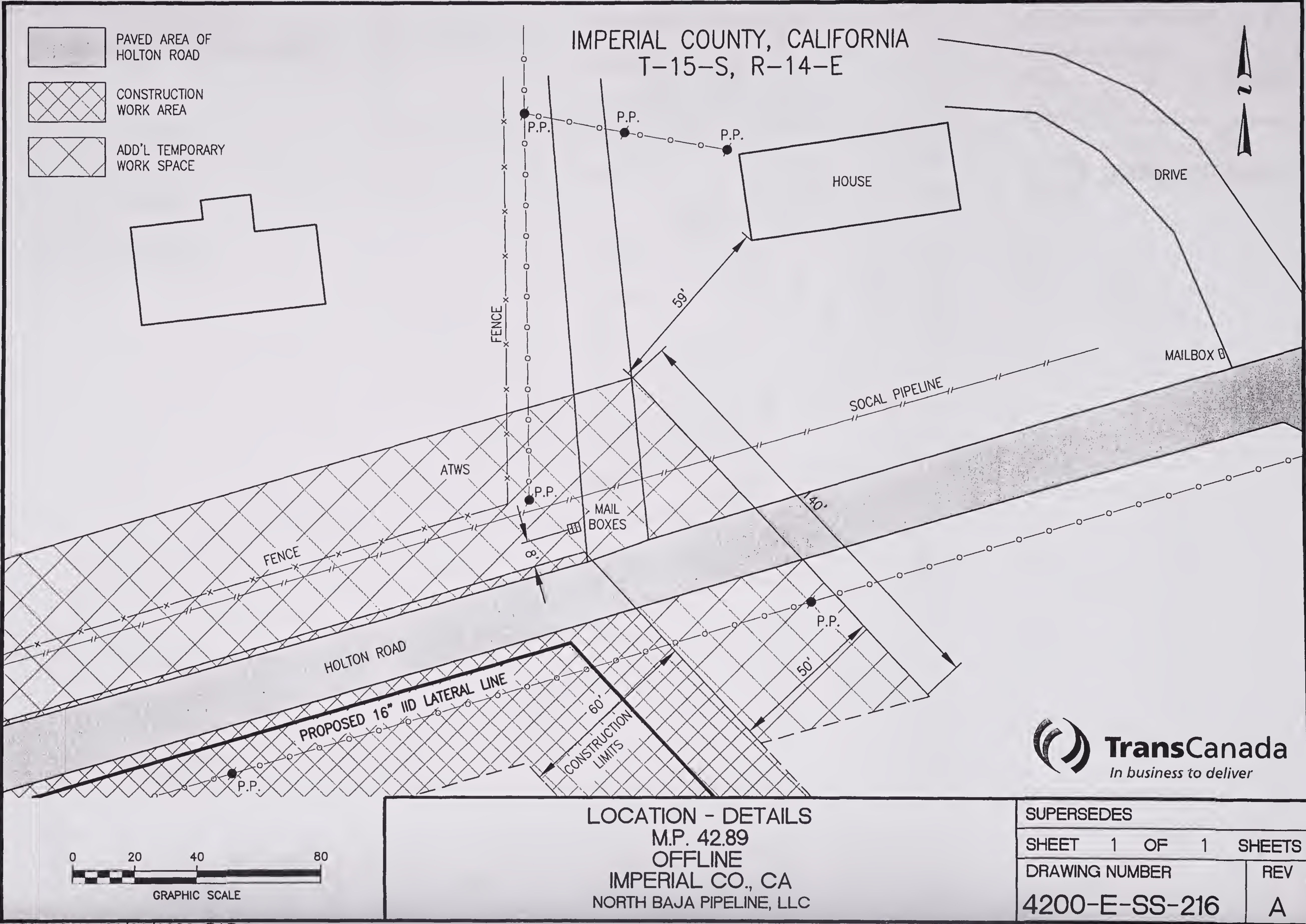
LOCATION - DETAILS
M.P. 42.12
TRACT CA-IM-2360
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES
SHEET 1 OF 1 SHEETS
DRAWING NUMBER 4200-E-SS-215
REV A

4200ESS215 03/06/2006 PAD

Mar 10, 2006 - 11:01 PM

paduca : 4200ess2`5.dwg



TransCanada
In business to deliver

LOCATION - DETAILS
M.P. 42.89
OFFLINE
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	
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DRAWING NUMBER	REV
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4200ESS216 03/06/2006 PAD

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Mar 10, 2006 - 11:01 PM

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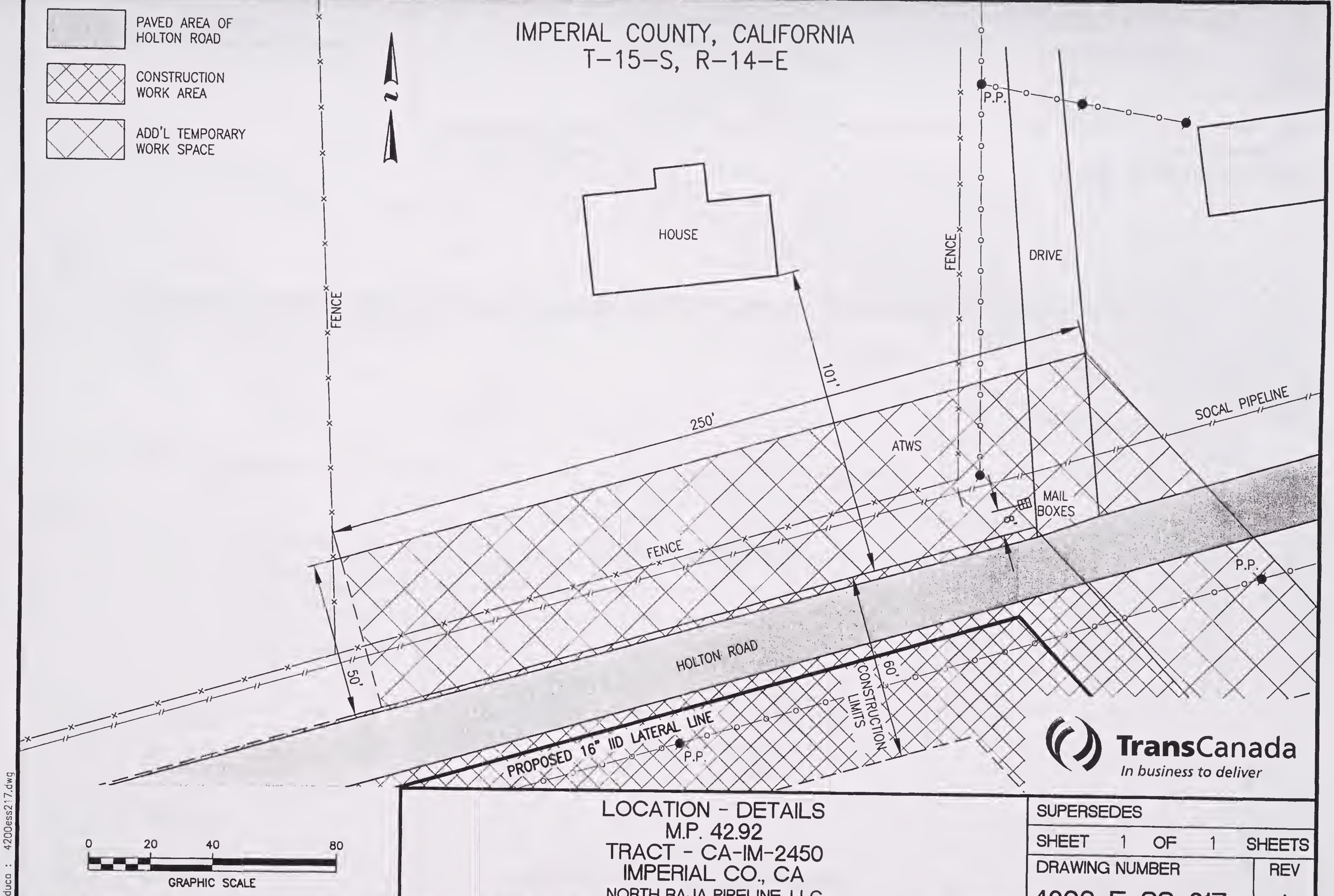

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IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

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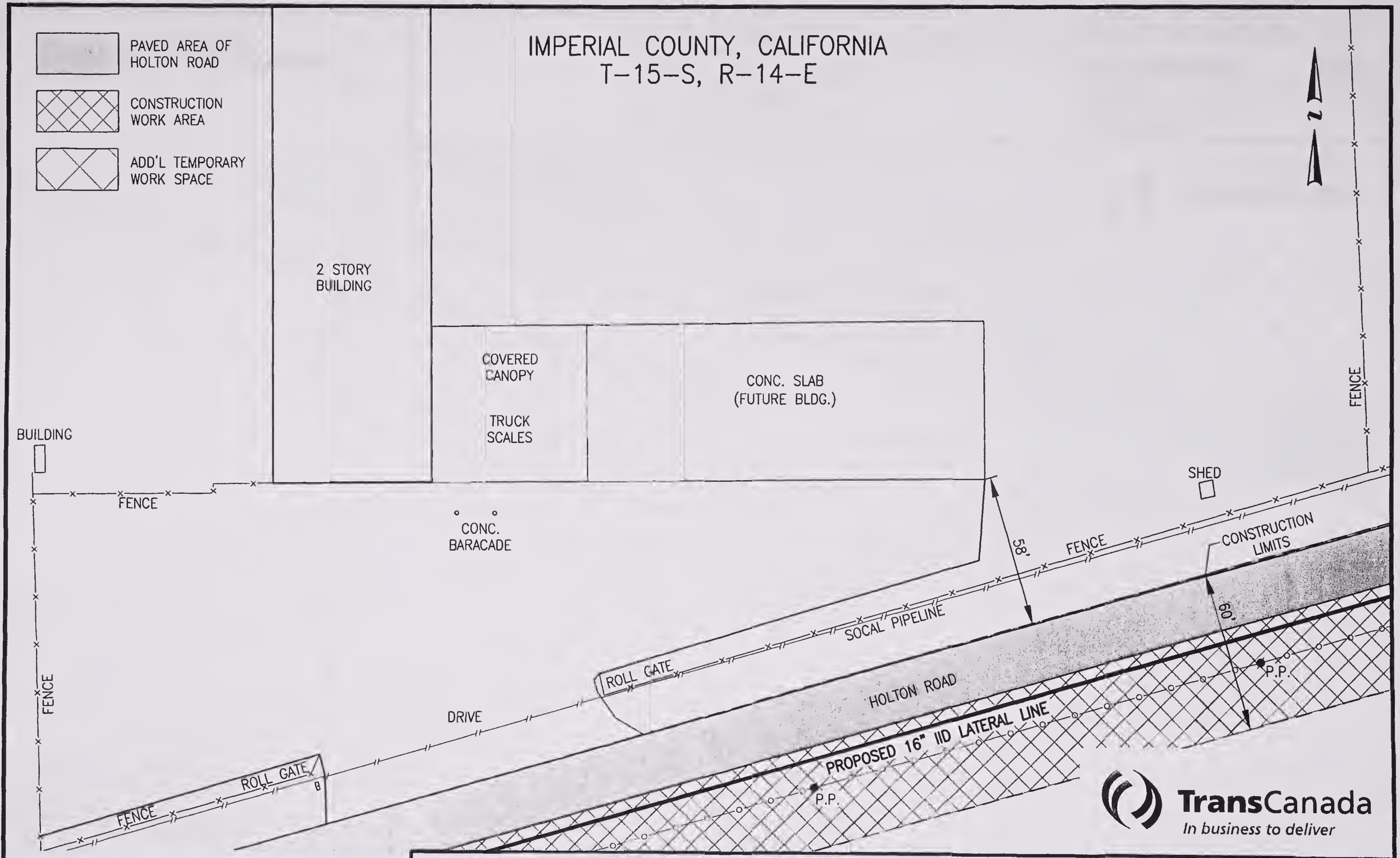

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NORTH BAJA PIPELINE, LLC

SUPERSEDES

SHEET 1 OF 1 SHEETS

DRAWING NUMBER	REV
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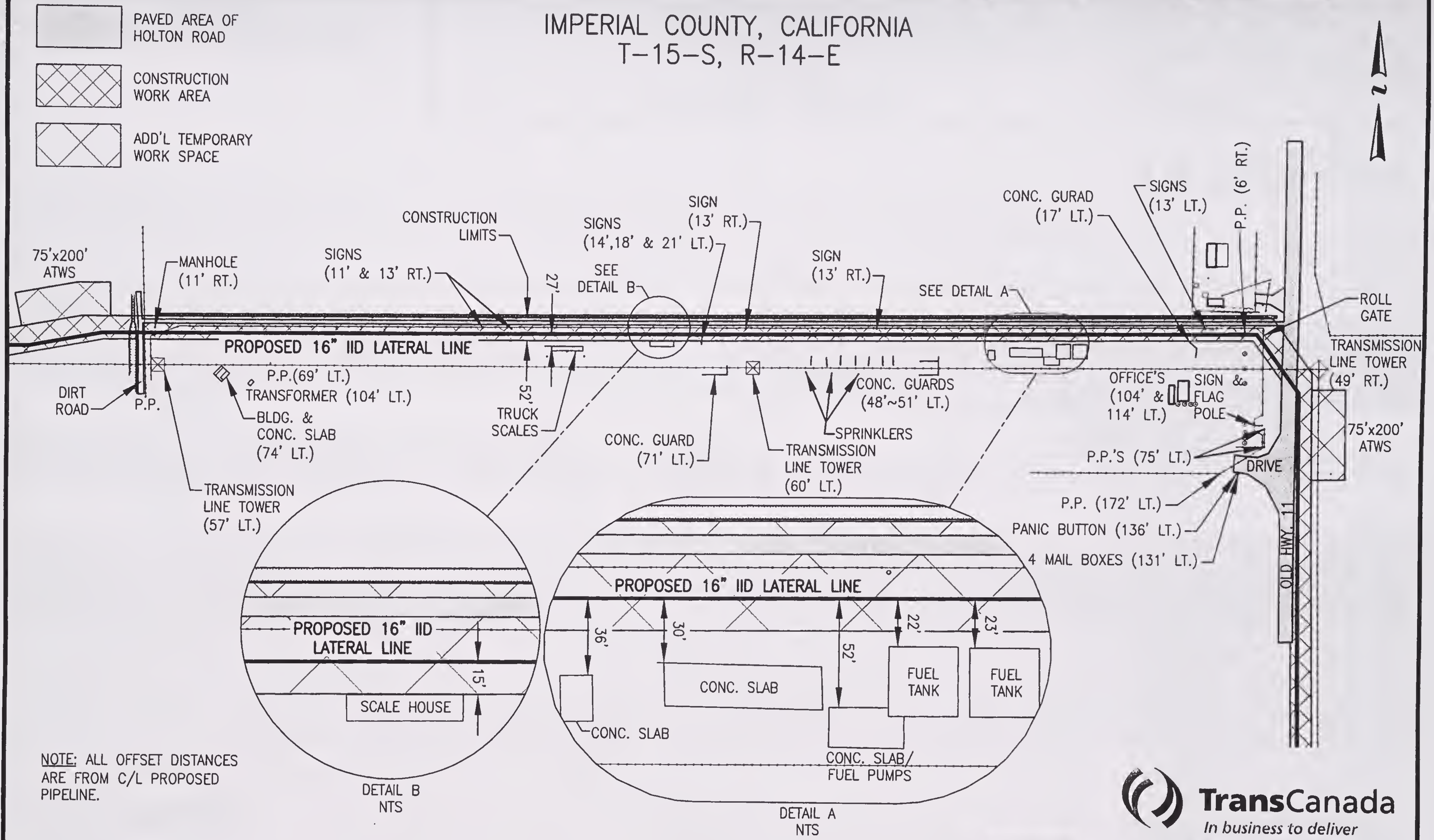

NOTE: ALL OFFSET DISTANCES ARE FROM C/L PROPOSED PIPELINE.

TransCanada
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NORTH BAJA PIPELINE, LLC

SUPERSEDES	
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4200ESS219 03/08/2006 SJS

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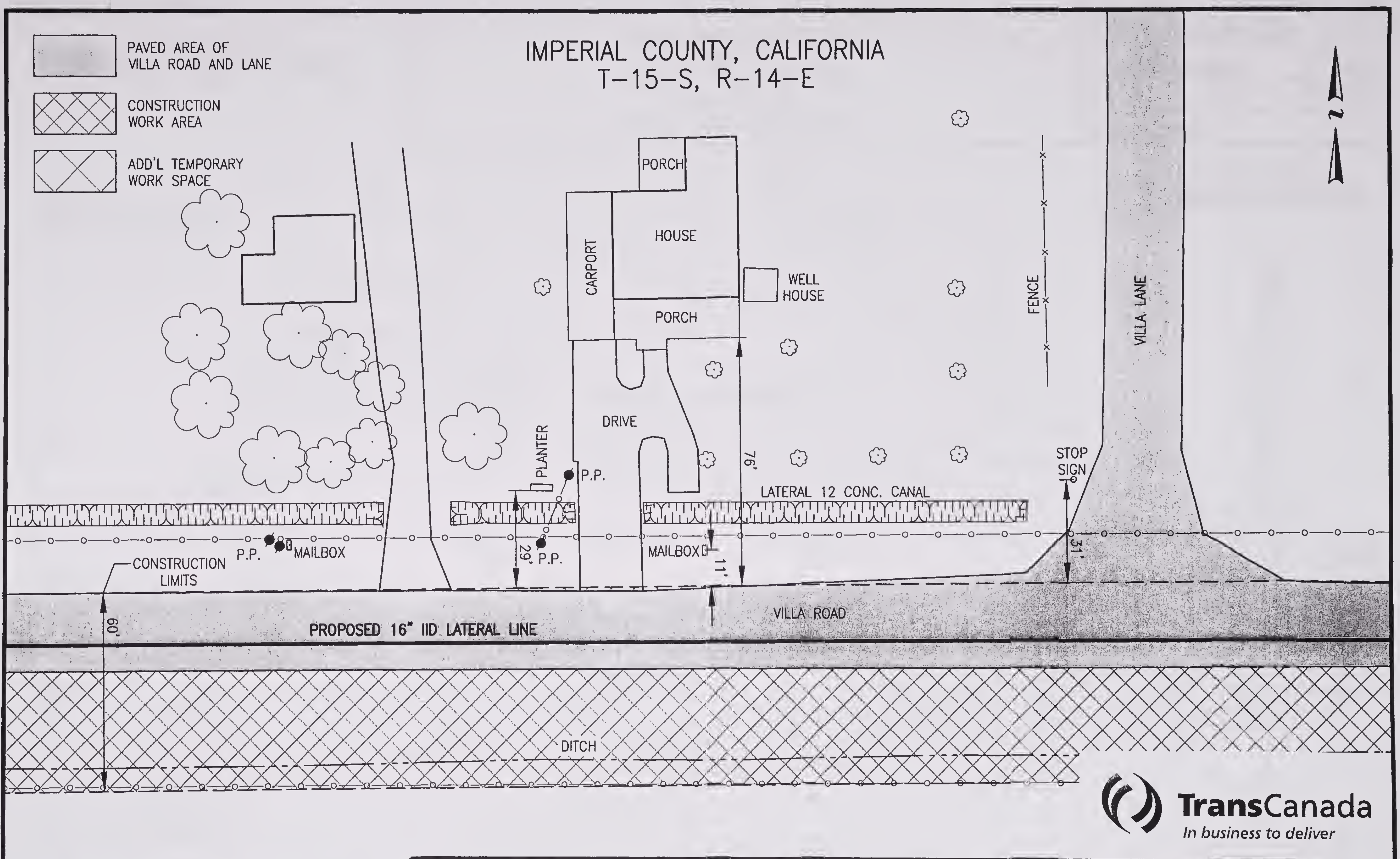

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NORTH BAJA PIPELINE, LLC

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DRAWING NUMBER	REV
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4200ESS220 03/07/2006 SJS

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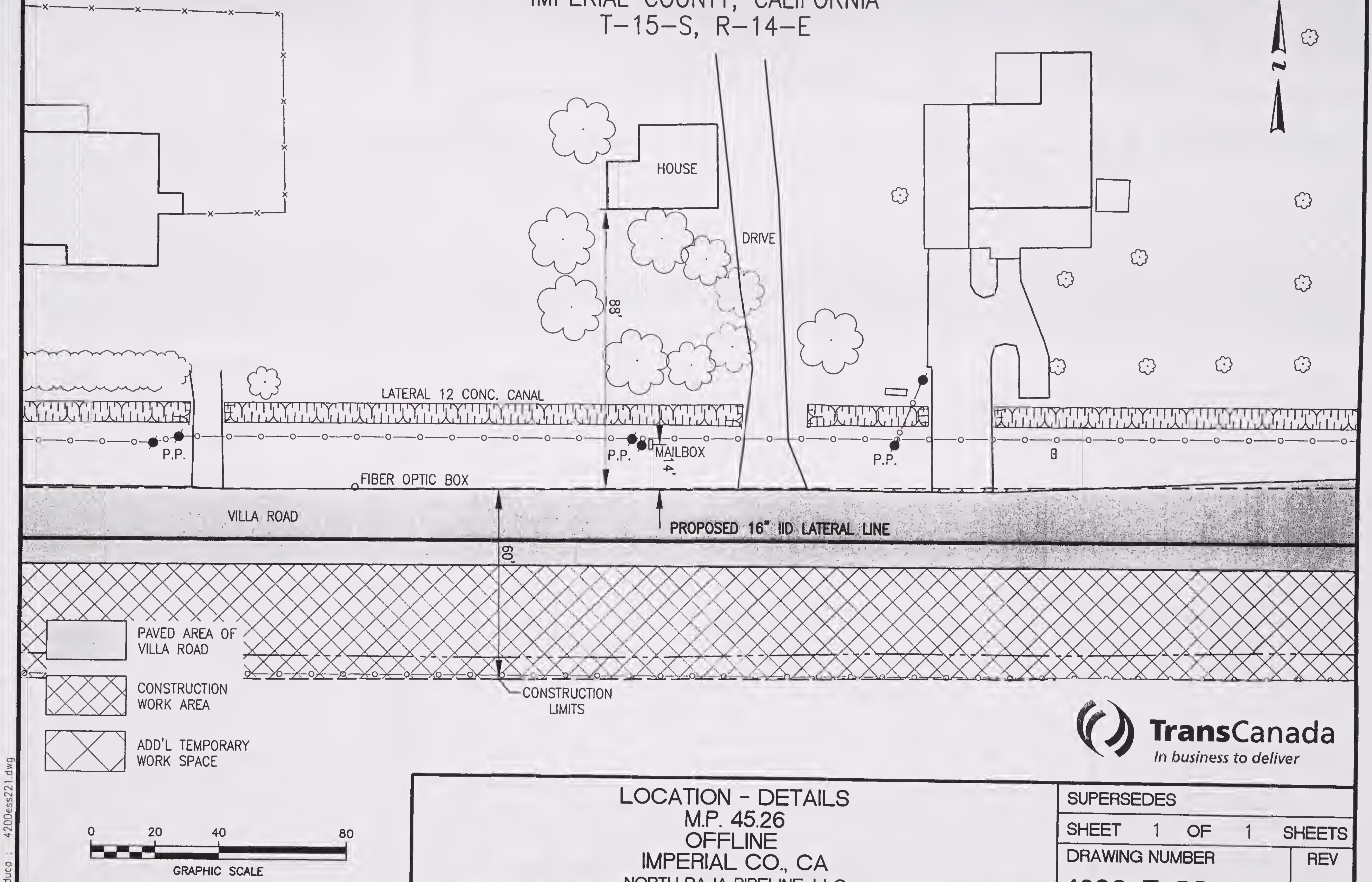

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NORTH BAJA PIPELINE, LLC

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4200ESS221 03/07/2006 SJS

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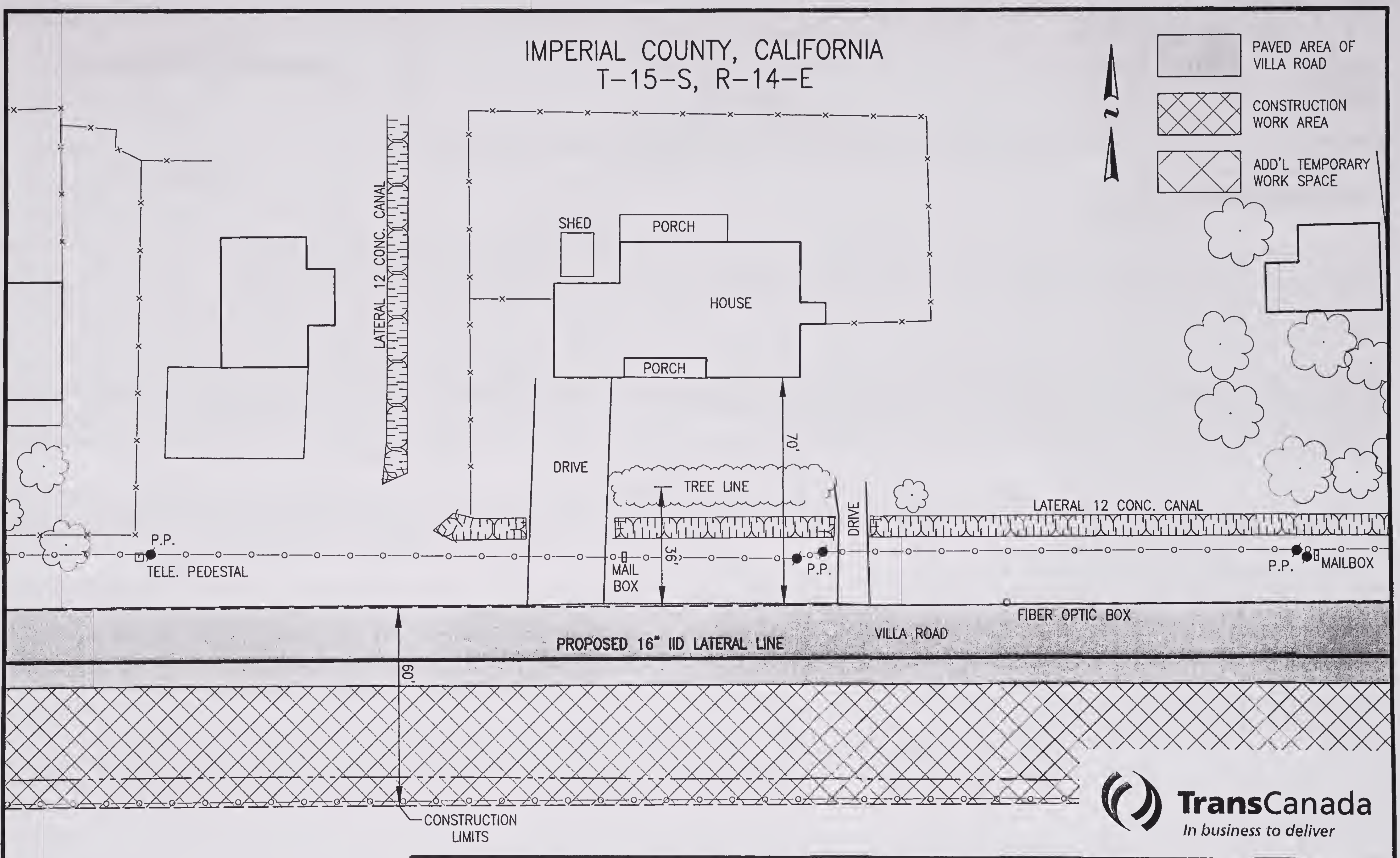

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NORTH BAJA PIPELINE, LLC

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4200ESS222 03/07/2006 SJS

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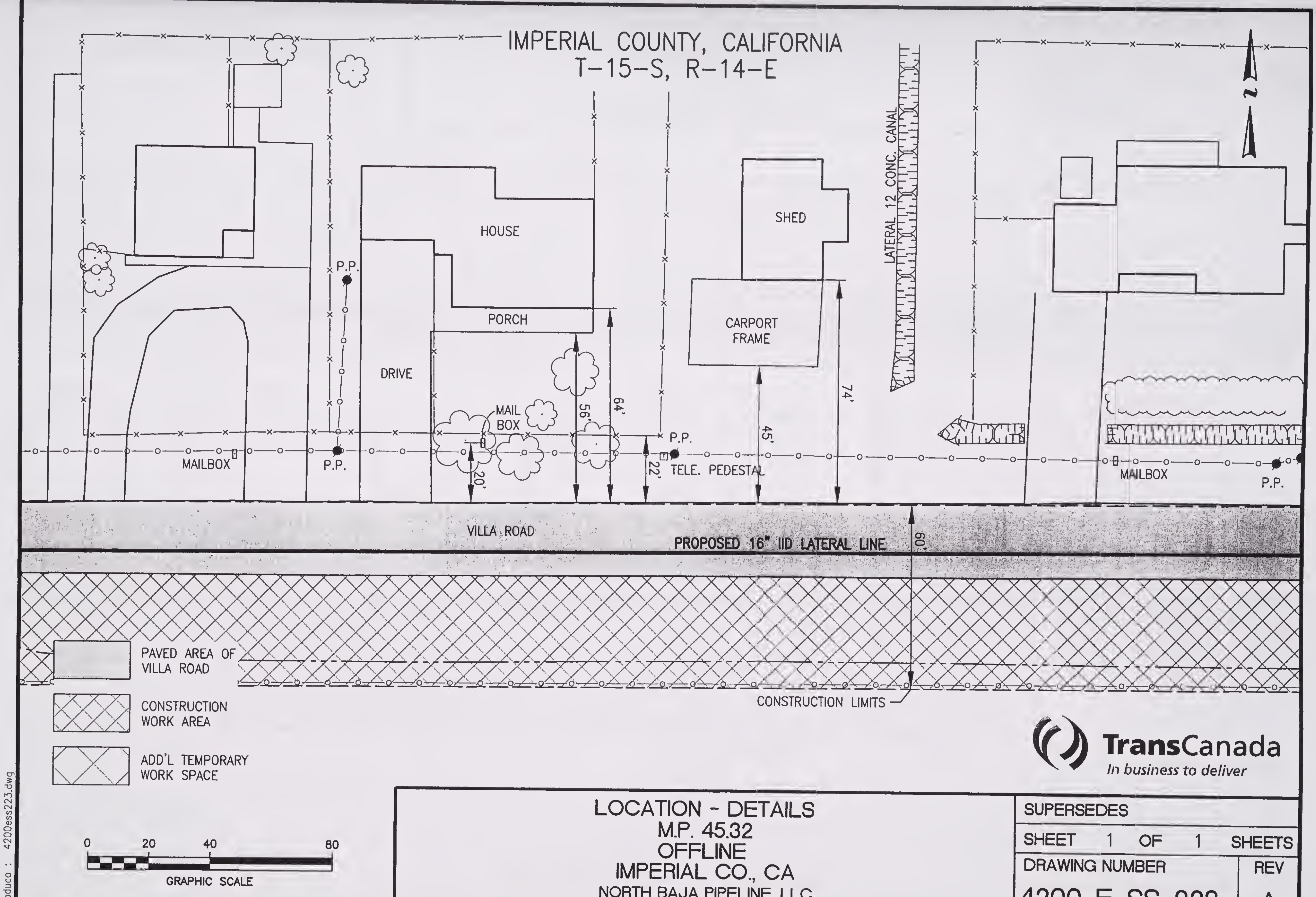

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IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES
SHEET 1 OF 1 SHEETS
DRAWING NUMBER
4200-E-SS-223
REV
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4200ESS223 03/07/2006 SJS

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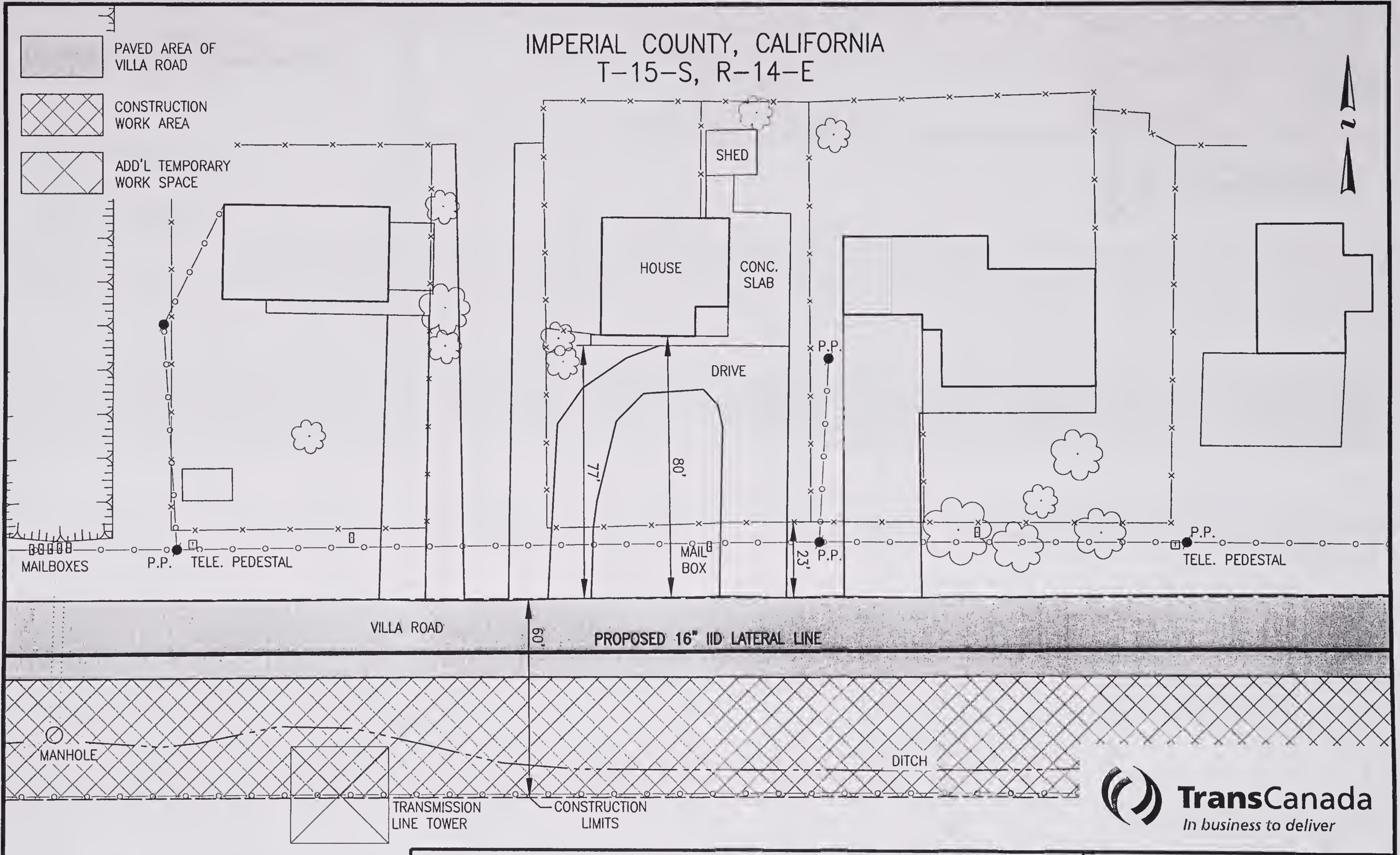
T-15-S, R-14-E



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GRAPHIC SCALE

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LOCATION - DETAILS
M.P. 45.36
OFFLINE
IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
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4200ESS224 03/07/2006 SJS

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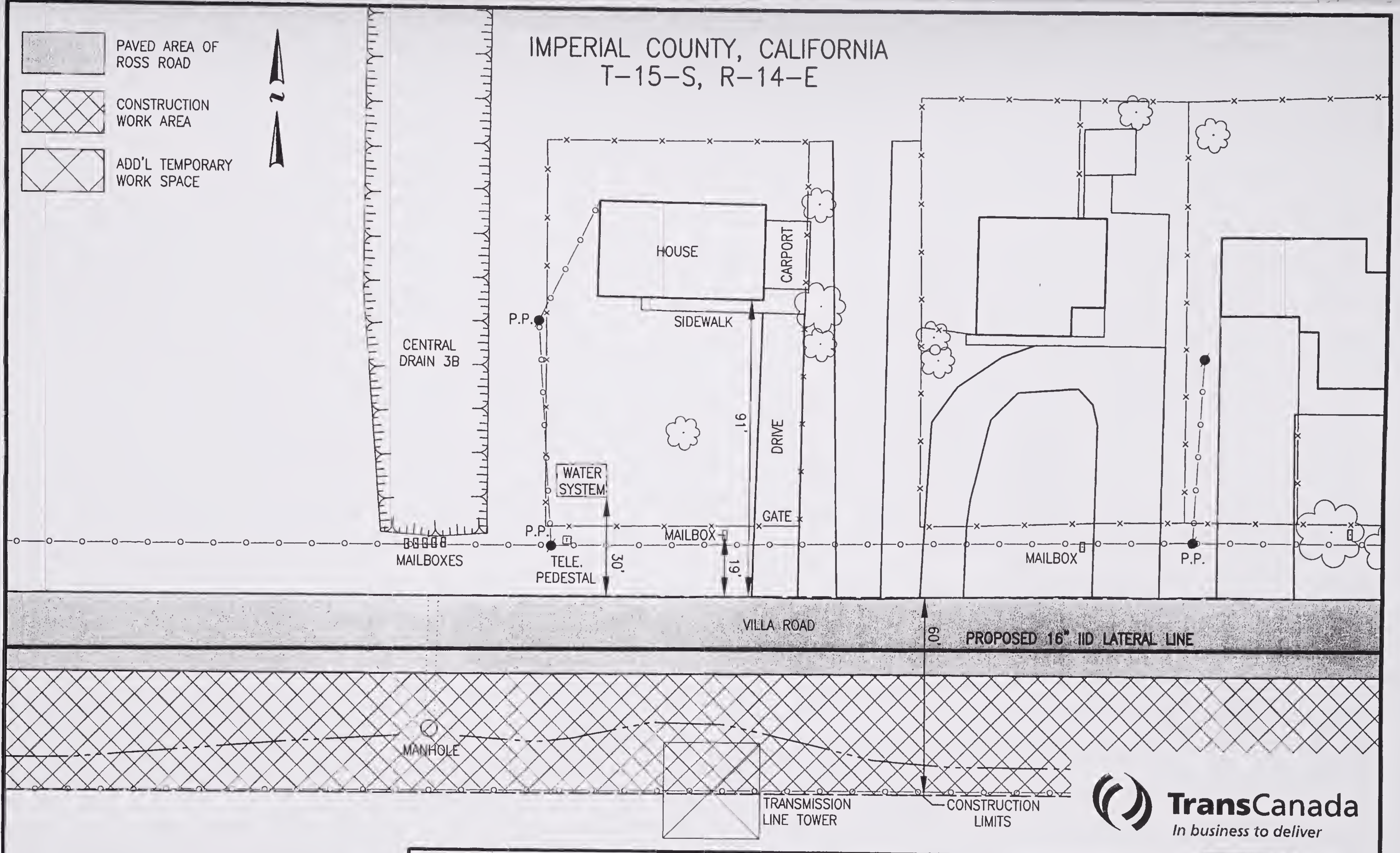

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LOCATION - DETAILS
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IMPERIAL CO., CA
NORTH BAJA PIPELINE, LLC

SUPERSEDES	
SHEET 1 OF 1 SHEETS	
DRAWING NUMBER	REV
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4200ESS225 03/07/2006 SJS

Mar 10, 2006 - 11:03 PM

paduca : 4200ess225.dwg

APPENDIX P

OFF-HIGHWAY VEHICLE MANAGEMENT PLAN

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North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix P
Off-Highway Vehicle Management Plan

Prepared by

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1940 E. Deere Ave. Suite 200
Santa Ana, CA 92705

February 2006

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Appendix P

Off-Highway Vehicle Management Plan

1.0 INTRODUCTION

The North Baja Pipeline Expansion Project (Project) will construct a new natural gas pipeline to connect with the Gasoducto Bajanorte Pipeline at the U.S.-Mexico border and to the existing North Baja facilities and the El Paso Natural Gas system in Ehrenberg, Arizona. In addition, new connections will be made with the Southern California Gas Company (SoCal Gas) system and with the Blythe Energy Facility I supply pipeline, both in Blythe, California, and with the Imperial Irrigation District's (IID) El Centro Generating Station in El Centro, California. The proposed Project will be constructed in phases, with the first phase planned for construction in 2007, the IID Lateral for 2008, and the final phase of the North Baja Expansion in 2009, pending completion of upstream liquefied natural gas (LNG) terminal facilities.

The Project includes four elements: the B-Line, which includes a metering station and interconnection facilities in Ehrenberg, Arizona and Blythe, California, as well as a 79.8-mile, 42- and 48-inch diameter pipeline between Blythe and the Mexican border; the Blythe Energy Interconnect Lateral (BEI Lateral), a 0.6-mile, 10-inch diameter pipeline that connects the Blythe Meter Station to the existing supply pipeline for the Blythe Energy Facility I; the short (less than 0.1-mile) 36-inch diameter SoCal Gas Interconnect (located within the Blythe Meter Station and discussed with the Station); and the Imperial Irrigation District Lateral (IID Lateral), a 45.7-mile, 16-inch diameter pipeline between the B-Line and IID's El Centro Generating Station.

Construction and operation of the Project could cause conditions that may affect adjacent lands, pipeline integrity, or off-highway vehicle (OHV) users. One of the near-term effects of construction could be disruption of established OHV use or interference with pipeline construction activities. One of the long-term effects of pipeline construction and maintenance is the increased accessibility the right-of-way may provide for OHV use into previously restricted or inaccessible areas. To reduce the potential for interference between pipeline construction activities and OHV users and inappropriate OHV use of the pipeline right-of-way, North Baja developed this plan to cover initial siting, construction, and operation of the pipeline. This plan is based on discussions with the Bureau of Land Management (BLM) recreation specialists and biologists in 2001-2002 and again in 2005, and experience gained while operating, maintaining, and managing the A-Line right-of-way since 2002.

2.0 SITING

The entire length of the B-Line will be located 25 feet west or south of the existing A-Line constructed in 2002. Use of the existing right-of-way does not add potential access points beyond those created by the A-Line and avoids creating a new right-of-way with new access points at some other location.

The IID Lateral, a new pipeline, has been sited at the edge of existing road shoulders or along existing transmission lines for 33.8 miles of its 46-mile total length. A 7.9-mile segment is located within the Imperial Sand Dunes Recreation Area (ISDRA), including a 5.6-mile distance through the Buttercup Management Area Campground, which is intensively managed for OHV uses. The selection of the IID Lateral route was based on an evaluation of alternative routes and consultation with the Bureau of Reclamation (BOR), IID, BLM, and the members of the Technical Review Team (Cassady 2005a, 2005b, 2005c). The location of the route accounts for concerns that arose during those consultation meetings.

The eastern end of the pipeline alignment (east of the All-American Canal [AAC] and Interstate [I-8]) will be located adjacent to an existing 500-kilovolt (kV) electric transmission line from milepost (MP) 0.1 to MP 2.3. This portion of the route is in the Ogilby Management Area of the ISDRA, an area of lighter OHV use and away from any developed recreational facilities. Between MP 2.3 and MP 2.6, the pipeline will be directionally drilled under I-8 and the AAC. From MP 2.6 the alignment continues west adjacent to the I-8 right-of-way to MP 4.4. In this segment the route traverses the northern edge of the Buttercup Campground, avoiding the main parking and vendor area by hugging the I-8 right-of-way, an alignment that was suggested by the ISDRA Technical Review Team (TRT) (Cassady 2005d, Appendix T).

West of the Buttercup Campground, BLM suggested that the area between Grays Well Road and I-8 is less intensively used than the area to the south of Grays Well Road. Accordingly, North Baja considered a route in this strip between the freeway and Grays Well Road. This area currently contains a wood pole line and a fiber optic line (Level 3), and is also somewhat more constricted than it appears by a relatively wide (400-foot) CalTrans right-of-way. While early investigations suggested there may still be room for the 16-inch pipeline within the strip, upon completing a recent field survey to more accurately locate the Level 3 fiber optic conduits, North Baja concluded that there is not sufficient space for the pipeline within this area. Beginning at MP 4.4 the proposed route turns south crossing Grays Well Road and three electric transmission lines, which it then parallels for 1.2 miles. Other alignment adjustments were made in this stretch at the suggestion of BLM, with the goal of avoiding the most intensively used areas. At MP 5.7 the alignment crosses I-8 to an area between the freeway and the AAC, where there is no access for OHV users. The pipeline will cross this area between MP 5.7 and 7.9, adjacent to an area that will be used by IID for its AAC relining project. The line will be drilled beneath the AAC (and exit the ISDRA) at MP 7.9. A block valve will be located at MP7.6. The valve is located in an area between the I-8 right-of-way and the AAC that is generally avoided by OHV enthusiasts because it is very difficult to access.

3.0 CONSTRUCTION

In the area crossed by the B-Line, OHV use is permitted only on BLM-designated routes of travel except between MPs 71.1 and 74.5 (see Section 4.0). Prior to construction, the right-of-way will be clearly marked on the ground. Where active construction is underway, the right-of way will be occupied by workers and equipment. OHV users will be directed back to designated routes of travel.

Construction of the IID Lateral would normally be planned for the winter to avoid the hottest weather and the nesting bird season. Because peak OHV use season is from Labor Day to Easter and is especially high in November and December, BLM recreation planners and the TRT recommended that pipeline construction take place during the summer months to avoid conflict with the high use recreational season (North Baja 2005a, 2005b). North Baja has incorporated this suggestion into its proposed construction schedule. The TRT also raised concerns that various recreational activities might conflict with the pipeline if it was buried at standard depths. In response to these concerns, the pipeline will be buried to ensure 6 feet of cover (3 feet greater than typical pipeline depths) between MPs 2.7 and 5.7.

During construction, the work area within the ISDRA will be fenced to prevent recreational users from entering the construction area. Because this will represent a short-duration recreational use restriction in a limited area during the low-use season, this will not constitute a significant impact. Surface contours will be re-established once the pipeline has been installed.

4.0 OPERATION

Where the pipeline will be located in areas of authorized OHV use such as between MPs 71.1 and 74.5 of the B-Line and MPs 2.3 to 7.9 of the IID Lateral (both segments are in the ISDRA), the pipeline right-of-way will not be restricted for OHV use, so no significant impact on recreational use will result with respect to normal pipeline operations. Short-term recreational impacts could result from operation and maintenance activities if North Baja needed to perform major maintenance work, such as pipeline repairs; however, such major work would occur seldom, if ever. Routine maintenance at block valves will occur inside the fenced valve yard and will not affect recreational use. During operation, North Baja will maintain a rigorous program of inspection to ensure that underground facilities are properly marked and the integrity of the pipeline is intact. In areas outside of the ISDRA where OHV use is supposed to be confined to designated roads and trails, North Baja will employ appropriate OHV blocking tools.

4.1 OHV BLOCKING GOALS AND TOOLS

Based on the premises that OHV users will use the right-of-way as a road if there are no blocking measures, and that a relatively small investment in visual blocking can reduce OHV route proliferation, North Baja implemented in 2002 blocking measures at certain important intersecting road crossings for the A-Line. In 2002 three categories of roads were considered in the OHV blocking plan where crossed by the pipeline right-of-way:

- Paved roads,
- Existing unpaved roads, and
- Obvious OHV tracks.

Where the proposed right-of-way closely parallels an existing route, it was assumed that although the right-of-way is visible, it will not be attractive to OHV users. Inspection of the right-of-way from parallel roads during 2005 confirmed this original assumption.

Where the right-of-way crosses one of these road types, consideration was given to one of several OHV blocking tools:

- Berms will be placed across the right-of-way where it intersects an existing OHV road. Berm slopes shall not exceed 30 percent.
- Berms will be placed across the right-of-way as part of erosion control, strategically placed to reduce visibility and mimic local topography.
- Rock redistribution and strategic placement, without making it into a challenging obstacle course, will occur across the pipeline where large rock is available and such work would "erase" the visual cues of "road."
- The right-of-way will be backbladed or raked by bulldozer or by hand, to erase the traces of the intersection of the pipeline with an existing OHV route or dirt road.

- Ocotillo and large cacti will be salvaged and replanted where they are available, with the understanding that survival criteria would not be applied because even dead specimens can provide convincing visual clues of "no road."
- Other desert species, including creosote bush scrub and desert wash woodland species (palo verde, ironwood, smoke tree, *etc.*) will also be salvaged and replanted, with the understanding that they would be unlikely to survive but could still provide value as a visual block even if they are dead.
- Woody material removed during construction will be redistributed across the right-of-way used to both disguise the right-of-way and serve as "vertical mulch."
- No action will be taken where it is apparent that no blocking measure would prevent OHV use.

4.2 ASSESSMENT

4.2.1 B-Line

An assessment of road crossings along the A-Line right-of-way was completed in December 2001 through the use of aerial photographs and field verification. The substrate, terrain, vegetation, and other roads within the area, especially those that run parallel to the right-of-way, were all considered during the assessment. Additionally, North Baja and BLM conducted a joint survey of the pipeline route prior to construction in order to further identify and assess locations where visual blocking of the right-of-way will help to discourage use of the right-of-way by unauthorized OHV traffic. The results of that assessment are described in the OHV Blocking Plan (North Baja 2001). The plan related specific landscape features for 16 route segments and the type of blocking methods that might be successful, and identified the method selected for a specific road crossing.

Because the B-Line will be located in the existing operational right-of-way for the A-Line, the same road crossings are still applicable. Proposed blocking measures are described below.

Milepost 0.36 (Riviera Drive) —An earthen berm was installed across North Baja's right-of-way on the western edge of Riviera Drive to discourage OHV users from accessing other parts of the property from that location. This has proven effective in discouraging access down the right-of-way from this location. However, OHV use on the right-of-way originating from other locations has been relatively heavy on the North Baja and adjacent SoCal Gas rights-of-way. Based on a review of pre-construction aerial photography, this appears to be a continuation of an OHV use pattern established prior to North Baja's existence. North Baja proposes to reconstruct the earthen berm at Riviera Drive after construction of the Colorado River loop and, with the property owner's concurrence, will leave the right-of-way with a rougher, more hummocky surface, instead of the smooth finished grade that matches that adjacent ground surface. This may make the right-of-way less attractive as a travel way. North Baja will also offer to procure and install signs for the property owner, should he choose to attempt to discourage OHV access at the main entry points on the property (unrelated to the pipeline right-of-way).

Milepost 11.88—An existing dirt road crosses the right-of-way at MP11.88, this road also was used as a temporary access road to the right-of-way during A-Line construction in 2002. This area is very sandy and dominated by herbaceous plants and creosote bush, and the terrain is relatively flat. It is likely that this area will disguise itself fairly quickly with herbaceous plants, and thus the recommended method of visual blocking was raking and replanting of creosote bush. In 2005, evaluation of this revegetation effort indicated that OHV blocking efforts were successful. After construction of the B-Line, the right-of-way will be raked and creosote bush will be replanted to block OHV access.

Mileposts 12.5, 13.25, 14.9 (Gravel Pit Road), 16.2, and 18.3 (Bradshaw Trail)—These roads are all existing dirt roads that intersect with the powerline access road, which runs parallel to the right-of-way. The substrate is sand with small gravel, and the terrain is flat. The adjacency of the A-Line to the existing powerline right-of-way made visual blocking measures less likely to be effective, and the right-of-way does not increase access into previously inaccessible areas. The redistribution of woody material across the right-of-way was enough to discourage OHV traffic from using the pipeline as a road. Evaluation of this measure in 2005 indicated that these measures were effective. They will be re-instituted after construction of the B-Line.

Milepost 22.1—This major dirt road that is used by many recreational vehicle (RV) drivers to get to desired camping areas. The substrate and terrain are the same as above. In 2002, it was recommended that 3-foot berms be placed across the right-of-way at this location to discourage traffic from turning onto the right-of-way instead of the powerline right-of-way access road. Evaluation in 2005 of this measure indicated that it was effective. The same measures will be re-instituted after construction of the B-Line.

Mileposts 23.97, 24.04, and 24.27—These are signed access roads that lead into a dry desert wash, which is then used as OHV access. The terrain is flat, and the area is thickly vegetated with saltbush. Respreading the cut vegetation over the right-of-way to provide sufficient blocking were the measures implemented at these crossings in 2002. Evaluation of these measures in 2005 indicated that they were effective. They will be re-instituted after construction of the B-Line.

Milepost 34.95 (Walter's Camp Road)—This is a major road that parallels the bank of Milpitas Wash. The terrain at the area where the road crosses is hilly, so a berm could be used effectively to block OHV traffic and blend into the surrounding landscape. In 2002, a 3-foot berm was placed to the north of the road intersection because Milpitas Wash is directly south of the road intersection, and the bank of Milpitas Wash provided its own blocking. Evaluation of these measures in 2005 indicated that it was effective. It will be re-instituted after construction of the B-Line.

Mileposts 35.05 to 35.73 (Milpitas Wash)—Milpitas Wash is a large desert wash that is used as a track for OHV users. Because the banks of the wash were restored to their original contours in 2002, the pipeline route to the north and south of the wash was effectively blocked to OHV traffic within the wash. However, to more effectively reduce the visual cues, replanting of desert wash trees was recommended in 2002 for areas within the right-of-way and along the banks where the right-of-way intersects. Evaluation of these measures in 2005 indicated that they were effective, and OHV usage has not created a problem in this area. They will be re-instituted after construction of the B-Line.

Mileposts 36.9, 41.5—The substrate along this part of the pipeline consists of desert varnish coated desert pavement, and the terrain is hilly. The right-of-way is approximately 250 feet off State Route 78 at this location. After construction of the A-Line in 2002, 3-foot-tall berms were constructed along the right-of-way, and backblading was also used. Evaluation of these measures in 2005 indicated that they were effective. They will be re-instituted after construction of the B-Line.

Milepost 39.0— At this location a dirt road and a wash intersect with the right-of-way. The substrate and terrain at this location are the same as that of milepost 36.9A, as is the location of State Route 78. Therefore, the visual blocking method recommended is the strategic placing of berms (3 feet tall) along the right-of-way, the use of backblading, or both.

Milepost 42.25—This crossing is a desert wash that is used by OHV traffic. Because the banks of this wash are steep, the recontouring of the banks will provide OHV blocking. Replanting of desert wash vegetation will provide further visual blocking of the right-of-way.

Milepost 47.3—This is an existing dirt road that crosses the right-of-way behind the Border Patrol Checkpoint along State Route 78. The substrate and terrain at this location are similar to that at MPs 36.9A, 39.0A, and 41.5A. Two- to three-foot tall berms along the right-of-way and backblading were recommended and installed in this area in 2002. Evaluation of these measures in 2005 indicated that they were effective. They will be re-instituted after construction of the B-Line.

Milepost 49.0 (Black Mountain Road)—Black Mountain Road is a maintained dirt road. The road cut currently has berms on either side. The creation of 3-foot-tall berms across the right-of-way on either side of Black Mountain Road and replanting of salvaged cacti or ocotillo will create an effective block to OHV traffic.

Milepost 49.4—The right-of-way parallels a powerline at this location. A powerline access road crosses the right-of-way within a small desert wash. The use of a 4-foot berm at the edge of the wash in 2002 blended into the landscape and discouraged OHV traffic from using the pipeline as road access. Cacti and ocotillo salvage and replanting in 2002 also discouraged OHV traffic. Evaluation of these measures in 2005 indicated that they were effective. They will be re-instituted after construction of the B-Line.

Milepost 49.8—This location is similar to that at MP 49.4 in that the right-of-way parallels a powerline with an access road. Therefore, the blocking measure recommended and implemented in 2002 was a single 4-foot berm that blended into the landscape and cacti salvage and replanting to discourage OHV traffic from using the pipeline as a road. Evaluation of these measures in 2005 indicated that they were effective. They will be re-instituted after construction of the B-Line.

Mileposts 50.2, 50.7, and 51.8—These three crossings are all within dry desert washes with desert wash trees. The wash banks were restored after construction of the A-Line to their natural contours, thereby providing natural berms. Additional blocking measures included salvage and replanting of desert wash trees across the right-of-way on both banks of the wash.

Mileposts 54.45 and 54.47—At this location two dirt roads intersect the right-of-way within approximately 125 feet of each other. The terrain is relatively flat, and the substrate is desert varnish-coated desert pavement. Backblading was used in 2002 to disguise the right-of-way, and 3-foot berms were placed across the right-of-way at the far north and south sides of the two roads to discourage OHV traffic on the right-of-way. These measures were effective and will be reinstated after construction of the B-Line.

Milepost 54.98 (Ogilby Road)—Ogilby Road is a paved county road that leads from State Route 78 to I- 8. To the south of this intersection, the right-of-way parallels Ogilby Road. To prevent OHV traffic to the north of this intersection, a 4-foot berm was placed across the right-of-way in 2002 on the north side of the intersection. Evaluation of these measures in 2005 indicated that they were effective because no OHV tracks were observed in this area. They will be re-instituted after construction of the B-Line.

Mileposts 55.85, 56.45, 56.92, 57.05, 66.8, 67.0, 69.25, and 70.9—The right-of-way at these eight crossings parallels Ogilby Road. The edge of the right-of-way is within 100 feet of Ogilby Road. The substrate is desert varnish-coated desert pavement, and the terrain is relatively flat and sparsely vegetated. The adjacency to Ogilby Road made blocking measures such as berms, backblading, or replanting unlikely to adequately block the right-of-way. Therefore, at these crossing locations no action was recommended or taken in 2002. Evaluations of these crossing measures in 2005 indicated limited OHV traffic. A similar approach will be taken after construction of the B-Line.

Mileposts 64.9 (Walker Way Road), 65.36 (County Road 8125), and 66.5 (Golden Rock Ranch Road)—These three roads are all maintained dirt roads that are predominantly used by RV drivers and other campers to get to desired camping spots. Because campers use the area, the right-of-way could potentially be seen as an OHV route. The maintenance of the roads has created berms, which were enhanced in 2002 after construction of the A-Line (to a total height of 4 feet) at the locations where they intersected the right-of-way to discourage drivers from using the right-of-way as a road. Evaluation of this measure in 2005 indicated that it was effective. They will be re-instituted after construction of the B-Line.

4.2.2 IID Lateral

Mileposts 0.0 to 7.9 (ISDRA)—This area is a recognized OHV use area. OHV blocking measures are unnecessary.

Mileposts 7.9 to 46.0 (primarily Imperial County roadways)—This segment of the IID Lateral will be located at the edge and sometimes in the pavement of the traveled way. OHV blocking measures are unnecessary.

4.2.3 BEI Lateral

The 0.5-mile BEI Lateral is partially in inactive agricultural lands and/or open land vegetated with tamarisk which will be removed and disposed of. Only a very short segment between the Blythe Meter Station and Riviera Drive would lie in open ground. The remainder will be in the realigned location of Riviera Drive. This area does not provide access to previously restricted or inaccessible areas; therefore, OHV blocking measures are unnecessary.

5.0 REFERENCES

Cassady, J. 2005a. Imperial Irrigation District Meeting Notes, July 19, 2005, provided in Appendix T

Cassady, J. 2005b. Bureau of Reclamation Meeting Notes, October 12, 2005, provided in Appendix T

Cassady, J. 2005c. Imperial Sand Dunes Recreational Area Technical Review Committee Meeting Notes, October 12, 2005, provided in Appendix T

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APPENDIX Q

VISUAL RESOURCE STUDY

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North Baja Pipeline, LLC

NORTH BAJA PIPELINE EXPANSION PROJECT

Appendix Q
Visual Resource Study

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Appendix Q

Visual Resource Study

1.0 INTRODUCTION

The North Baja Pipeline Expansion Project (Project) will construct a new natural gas pipeline to connect with the Gasoducto Bajanorte Pipeline at the U.S.-Mexico border and to the existing North Baja facilities and the El Paso Natural Gas system in Ehrenberg, Arizona. The Project includes four elements: the B-Line, which includes a metering station and interconnection facilities in Ehrenberg, Arizona and Blythe, California, as well as a 79.8-mile, 42- and 48-inch diameter pipeline between Blythe and the Mexican border; the Blythe Energy Interconnect Lateral (BEI Lateral), a 0.6-mile, 10-inch diameter pipeline that connects the Blythe Meter Station to the existing supply pipeline for the Blythe Energy Facility I; the short (less than 0.1-mile) 36-inch diameter SoCal Gas Interconnect (located within the Blythe Meter Station and discussed with the Station); and the Imperial Irrigation District Lateral (IID Lateral), a 45.7-mile, 16-inch diameter pipeline between the B-Line and IID's El Centro Generating Station.

The purpose of this report is to evaluate the visual impact of the proposed Project. The specific facilities evaluated in this analysis are listed in Tables Q-1 and Q-2. The location of the Project is shown in Figure Q-1.

Table Q-1: Pipeline Facilities Associated with the North Baja Expansion Project

Facility	Pipe Diameter (inches)	Approximate Milepost	Length (in miles)	County, State
B-Line				
Colorado River Loop	42	0.0 to 0.5	0.5	La Paz, AZ, Riverside, CA
Mainline Loop	42/48	0.5 to 79.8	79.3	Riverside, CA Imperial, CA
B-Line Total		-	**79.8**	
SoCal Gas Interconnect [1/]	36	0.5	0.0	Riverside, CA
BEI Lateral	10	0.5	0.6	Riverside, CA
IID Lateral	16	0.0 to 45.7	45.7	Imperial, CA
Project Total			**126.0**	

1/ The SoCal Gas Interconnect is located entirely within the Blythe Meter Station

Table Q-2: Aboveground Facilities Associated with the North Baja Expansion Project		
Facility	**Approximate Milepost**	**County, State**
B-Line		
Ehrenberg Compressor Station modifications and pig receiver	0.0	La Paz, AZ
Blythe Meter Station	0.5	Riverside, CA
Rannells Trap pig launcher and receiver	11.7	Riverside, CA
Mainline Valve #1	0.0	Riverside, CA
Mainline Valve #2	5.7	Riverside, CA
Mainline Valve #3	11.7	Riverside, CA
Mainline Valve #4	11.7	Riverside, CA
Mainline Valve #5	28.0	Imperial, CA
Mainline Valve #6	41.6	Imperial, CA
Mainline Valve #8	75.2	Imperial, CA
Mainline Valve #9	75.2	Imperial, CA
Ogilby Meter Station modifications, odorant facility, and pig launcher, receiver	75.2	Imperial, CA
IID Lateral		
Tap at mainline and pig launcher	0.0	Imperial, CA
IID Lateral Valve #1	0.0	Imperial CA
IID Lateral Valve #2	7.6	Imperial CA
IID Lateral Valve #3	27.2	Imperial CA
IID Lateral Valve #4	38.7	Imperial CA
El Centro Meter Station and pig receiver	45.7	Imperial CA

2.0 VRM PROCESS OVERVIEW

In order to assess visual resource impacts of the Project, it is important to understand the methodology used for the visual impact assessment. Most of the right-of-way crosses lands administered by the Bureau of Land Management (BLM). The BLM has developed a systematic approach to managing scenery and visual resources of landscapes, called the Visual Resource Management (VRM) System (BLM 2000). This system was used for the inventory of visual resources and evaluation of the predicted visual effects that could be created by the Proposed Project.

The purpose of the BLM VRM system is twofold: 1) to manage the quality of the visual environment and 2) to reduce the visual impact of development activities, while maintaining effectiveness in the BLM's resource programs. Managing the visual aspects of changes to the natural landscape is particularly important for the BLM because most activities taking place on BLM-administered lands involve some degree of alteration to the landscape.

The Federal Land Policy and Management Act of 1976 (FLPMA) requires that public lands be managed in a manner that will protect the quality of scientific, *scenic*, historical, ecological, environmental, air and atmospheric, water resources, and archaeological values (43 United States Code 1701). The BLM is concerned with managing visual impact without unduly reducing commodity production or limiting overall program effectiveness.

Because the scenic value and management objectives of public lands vary, it is not practical or desirable to provide a uniform level of visual management for all areas administered by the BLM. The agency has therefore developed a system for evaluating the visual resources of a given area and for determining what degree of protection, rehabilitation, or enhancement is desirable and possible.

The VRM system is an analytical process that identifies, sets, and meets objectives for maintaining scenic values and visual quality. It functions in two ways:

First, for management purposes, the BLM conducts an inventory that evaluates visual resources on all lands under its jurisdiction (*Inventory/Evaluation)*. Once inventoried and analyzed, lands are given relative visual ratings (*Management Classification)*. The development of Visual Management Classes is not project-specific. It is a general process to identify broad visual objectives for all public lands during land management planning processes.

Visual Management Classes are established through the resource management planning (RMP) process for all BLM-administered lands. During the RMP process, the Class boundaries are adjusted as necessary to reflect the resource allocation decisions made in RMPs. In accordance with BLM Manual 8400 (April 5, 1984), it is BLM policy that "***interim*** visual management objectives" are established where a project is proposed and there are no RMP approved Visual Management Classes. These interim objectives are developed using the guidelines in Manual Section 8410 and must conform to the land use allocations set forth in the RMP, which covers the project area. The establishment of interim VRM objectives will not require a plan amendment unless the project itself requires one.

Secondly, when any development is proposed – whether it is proposed by the BLM itself through its planning process, or by other agencies, or by the private sector – the degree of contrast between the proposed activity and the existing landscape is measured utilizing a methodology called "Contrast Rating".

The assessment of Project visual resource impacts is presented in four parts: 1) B-Line, 2) IID Lateral, 3) BEI Lateral and 4) aboveground facilities.

2.1 VRM PLANNING AUTHORITY

The North Baja Pipeline Expansion Project will cross public lands administered by three different field offices of the BLM: Palm Springs Field Office (B-Line MP 11.7 to 22.3); Yuma Field Office (B-Line MPs 22.3 to 33.8); and El Centro Field Office (B-Line MPs 33.8 to 79.8, and MPs 0.0 to 27.6 of the IID Lateral). Each of these BLM offices handles visual resource management differently.

Lands crossed by the B-Line under the jurisdiction of the BLM-Palm Springs Field Office, from MP11.7 to 22.3, do not have a formally designated Visual Management Class through the RMP process , and the BLM did not formally correlate Multiple-Use Class designations with VRM classifications (Jim Foote, BLM, 2004). However, since these lands have not been classified by the BLM and are also located within the CDCA, the CDCA Plan requires that each project develop "Interim VRM Classes and Objectives" (BLM 1980). Interim objectives were developed and included in the Visual Resource Study for the 2002 North Baja Project, and a detailed description of the process used to develop Interim VRM Classes was presented for that project. A synopsis of that process follows in this report for MP 11.7 to 22.3.

Visual resource classifications for lands under the jurisdiction of the BLM-Yuma Field Office are outside the CDCA (B-Line MPs 22.3 to 33.8). These lands are designated by the current RMP as Visual Management Class III. (Aaron Curtis, BLM, 2006; BLM 1987). The BLM Yuma Field Office is currently updating their RMP and VRM maps displayed at planning Open Houses have shown the entire California State Route 78 utility corridor as Visual Management Class III. Some surrounding lands have Class II because of extensive cultural resources. The new RMP may be adopted by the end of 2006.

Public lands administered by the BLM-El Centro Field Office (B-Line MPs 33.8 to 79.8) are based directly on the Multiple-Use Class designations developed through the CDCA Plan (Larry Caffey, BLM, 2005; BLM 1980). The Multiple-Use Class – VRM Class associations for lands administered by the El Centro field office are:

- Multiple-Use Class "C" = VRM Class I

- Multiple-Use Class "L" = VRM Class II
- Multiple-Use Class "M" = VRM Class III
- Multiple-Use Class "I" = VRM Class IV

For public lands administered by the BLM-El Centro Field Office and crossed by the IID Lateral (IID MPs 0.0 to 27.6) Visual Management Classes are based directly on the Multiple-Use Class designations developed through the CDCA Plan (Larry Caffey, BLM, 2005).

Visual Management Classes describe the different degrees of modification allowed to the basic elements of the landscape.

Class I. Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to wilderness areas, wild and scenic rivers, and other similar situations.

Class II. Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. Contrasts are seen, but must not attract attention.

Class III. Contrasts to the basic elements caused by management activity are evident, but should remain subordinate to the existing landscape.

Class IV. Any contrast attracts attention and is a dominant feature of the landscape in terms of scale, but it should repeat the form, line, color, and texture of the characteristic landscape.

Class V. This classification is applied to areas where the natural character of the landscape has been disturbed to a point where rehabilitation is needed to bring it up to one of the four other classifications. The classification also applies to areas where there is potential to increase the landscape's visual quality. It will, for example, be applied to areas where unacceptable cultural modification has lowered scenic quality; it is often used as an interim classification until objectives of another class can be reached.

Table Q-3 (derived from BLM 1986a) was used in 2001 to determine the Interim Visual Management Classes for the North Baja Pipeline. Because these same lands will be crossed by the B-Line from MP 11.7 to 22.3, in the BLM Palm Springs area, this table was used again in this report:

Table Q-3: Interim Visual Resource Management Classes

Visual Sensitivity	H	H	H	M	M	M	L
Special Areas	I	I	I	I	I	I	I
Scenic Quality A	II	II	II	II	II	II	II
Scenic Quality B	III	III	III	III	IV	IV	IV
Scenic Quality C	III	IV	IV	IV	IV	IV	IV
Distance Zones	FG/MG	BG	SS	FG/MG	BG	SS	SS

Note: Class V areas are those that have been identified in the VRM planning system which require rehabilitation or enhancement and therefore are not included in the chart above.

On BLM lands the proposed B-Line route crosses VRM Classes II, III, and IV lands (24.9, 23.5, and 6.8 miles, respectively). The IID Lateral crosses VRM Class II lands (20.8 miles) and VRM Class IV lands (4.9 miles).

Table Q-4 displays the various VRM Class objectives by Milepost and by Jurisdiction.

Table Q-4: VRM Class Designations by Milepost

	Milepost	VRM Class)			
		I	II	III	IV
B-Line					
	0.0-0.2	-	-	-	-
	0.2-3.4	-	-	-	-
	3.4-11.7	-	-	-	-
	11.7-14.5	-	-		2.7
	14.5 - 14.8	-	-		-
	14.8-17.3	-	-		2.5
	17.3 - 17.6	-	-		0.3-
	17.6 - 18.1	-	-		0.5
	18.1 - 18.3	-	-	-	-
	18.3 - 19.3	-		-	0.8-
	19.3-22.3	-	-	-	-
	22.3 – 33.8	-	-	4.2	-
	33.8 - 34.5	-		0.7	-
	34.5 – 39.6	-	4.9	-	-
	39.6 – 49.0	-	9.1	-	-
	49.0 – 52.0	-	-	3.0	-
	52.0 – 55.1	-	3.1	-	-
	55.1 – 62.0	-	-	6.9	-
	62.0 – 66.0	-	4.0	-	-
	66.0 – 71.3	-	-	4.4	-
	71.3 – 75.5	-	3.8	-	-
	75.5 – 79.8	-	-	4.3	-
IID Lateral					
	0.0 – 2.3	-	2.3	-	-
	2.3 – 7.2	-	-	-	4.9
	7.2 – 27.6	--	18.5	--	-
	27.6 - 45.6	-	-	-	-
BEI Lateral					
	0.0-0.5	-	-	-	-
SoCal Gas Interconnect					
		-	-	-	-
TOTALS		0	45.7	23.5	11.7

3.0 B-LINE AND ASSOCIATED FACILITIES

The B-Line will be located adjacent to the existing A-Line, generally offset 25 feet to the west side. The existing A-Line was approved in 2002 and constructed in spring and summer of 2002. Landscape restoration was completed in fall of 2002. Subsequently in the winter of 2004-2005, precipitation was received in the California Desert that was reported to be of a magnitude of "once-in-100-years." Revegetation of the pipeline right-of-way has been somewhat dramatic because of this precipitation. In order to document the visual effects of the existing pipeline construction activities and the effectiveness of mitigation measures undertaken during the initial phases of construction, operation and maintenance, this Visual Resource Study documents the changes that occurred at each of the eight Key Observation Points of the original mainline pipeline, called the "A-Line." Additionally, photographs were taken to show the visual effects of the mainline construction from the Mexican border to Ehrenberg Compressor Station near Blythe, California. These photographs proficiently show the visual effects of pipeline construction, operation and maintenance in the desert environment, and therefore, aid in the assessment of future visual effects of the proposed Project (see Attachment A).

3.1 VRM INVENTORY AND EVALUATION FOR PALM SPRINGS FIELD OFFICE BLM LANDS (MP 11.7 TO 22.3)

The visual resources inventory consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands from MP 11.7 to 22.3 were placed into one of four visual resources inventory classes. These inventory classes represent the relative value of the visual resources, Class I and II being the most valued, Class III representing a moderate value, and Class IV being of least value from a scenic standpoint. The inventory classes provide the basis for considering visual values in the RMP process.

The California Desert Conservation Area Plan (BLM 1980), as amended, identifies the following actions the BLM will take to effectively manage for activities involving alteration of the natural character of the landscape to some degree:

1. The appropriate levels of management, protection, and rehabilitation of all public lands in the CDCA will be identified, commensurate with visual resource management objectives in the multiple-use guidelines.

2. Proposed activities will be evaluated to determine the extent of change created in any given landscape and to specify appropriate design or mitigation measures using the BLM's contrast rating process.

Because in 2001, Visual Management Classes had not been adopted by the BLM in an RMP for Federal lands crossed by the A-Line, North Baja used BLM methodology to inventory, evaluate and establish Interim VRM objectives. The Visual Resource Management Report prepared by

North Baja and included as an appendix in the 2002 North Baja Pipeline EIS for the A-Line identified Interim VRM objectives utilizing the guidelines set forth in BLM Handbook 8410 (BLM 1986a). These objectives conformed to the land use allocations set forth in the CDCA Plan that covers the Project area. The methodology utilized to develop these interim VRM objectives is explained in the sections below, including scenic quality evaluation, sensitivity levels, and distance zones. A similar approach has been used for the Project facilities from MP 11.7 to 22.3. For areas that have a Visual Management Class objective based on a Multiple-Use Class, there is an explanation of the differences, if any.

3.1.1 Scenic Quality Evaluation

Scenic quality is a measure of the visual appeal of a tract of land. In the visual resource inventory process, public lands are given an A (distinctive scenery), B (common scenery), or C (minimal or low scenic value) rating based on the existing scenic quality which is determined using seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications (see Table Q-5). An important premise of the evaluation is that all public lands have scenic value, but areas with the most variety and most harmonious composition have the greatest scenic value. Another important concept is that the evaluation of scenic quality is done in relationship to the natural landscape. This does not mean that man-made (cultural) features within a landscape necessarily detract from the scenic value. Man-made features that compliment the natural landscape may enhance the scenic value, such as split rail fences or log cabins.

To conduct a scenic quality evaluation, a planning area is subdivided into scenic quality rating units. Rating areas are delineated on the basis of the following:

1. Like physiographic characteristics
2. Similar visual patterns, texture, color, variety, etc. and
3. Areas which have similar impacts from man-made modifications.

The size of a scenic quality rating unit (SQRU) may vary from several thousand acres to one hundred or less acres, depending on the homogeneity of the landscape features and the detail desired in the inventory. Normally, more detailed attention is given to highly scenic areas or areas known to have high sensitivity. The A-Line, which was constructed in 2002, generally is located south of Interstate Highway 10 (I-10) in an east-west direction, then turns south and is located east of State Route 78, and east and then west of State Route 34 both of which lie in a north-south direction.

Table Q-5: Scenic Quality Inventory and Evaluation Chart

Key Factors	Rating Criteria and Score		
Landform	High vertical relief as expressed in prominent cliffs, spires, or massive rock out-crops; or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers **5**	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional. **3**	Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features. **1**
Vegetation	A variety of vegetation types as expressed in interesting forms, textures, and patterns. **5**	Some variety of vegetation, but only one or two major types. **3**	Little or no variety or contrast in vegetation. **1**
Water	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape. **5**	Flowing, or still, but not dominant in the landscape. **3**	Absent, or present, but not noticeable. **0**
Color	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water, or snow fields. **5**	Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element. **3**	Subtle color variation, contrast, or interest; generally mute tones. **1**
Adjacent Scenery	Adjacent scenery greatly enhances visual quality. **5**	Adjacent scenery moderately enhances overall visual quality. **3**	Adjacent scenery has little or no influence on overall visual quality. **0**
Scarcity	One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wild-flower viewing, etc **5+**	Distinctive, though somewhat similar to others within the region. **3**	Interesting within its setting, but fairly common within the region. **1**
Cultural modifications	Modifications add favorably to visual variety while promoting visual harmony. **2**	Modifications add little or no visual variety to the area, and introduce no discordant elements. **0**	Modifications add variety but are very discordant and promote strong disharmony. **-4**

Scenic Quality
A= 19 or more
B= 12-18
C= 11 or less

In 2002, the SQRU for the North Baja Pipeline Route was established, inventoried and evaluated for the then proposed A-Line. Following is a summary of the scenic quality assessment for the pipeline route that was constructed in 2002. Because the B-Line will be built in the same right-of-way (25-feet away from the existing pipeline), the same scenic quality assessment applies to the B-Line as well for MP 11.7 to 22.3.

The dominant view of the landscape through which the right-of-way passes is a flat desert floor, covered with creosote bush scrub and widely scattered desert dry-washes. The majority of

BLM-administered lands under jurisdiction of Palm Springs and crossed by the B-Line are flat to hilly desert landscapes. Background views to the south reveal the Palo Verde Mountain Range in the background of the right-of-way. Following is a detailed discussion of landform, vegetation, water, color, adjacent scenery, scarcity and cultural modifications, which the BLM VRM system utilizes to establish existing scenic quality.

Landform. Regarding landforms, the Palo Verde Mesa generally slopes from west to east into and following the Colorado River drainage, with very little elevation change from MP 11.7 to 22.3. A few minor drainage swales cross the right-of-way corridor, however, no significant elevation change is observed.

Vegetation. The vegetative pattern on the desert floor is expansive areas of widely scattered, low-growing and sparse creosote bush scrub. Other plants observed in scattered locations include ocotillo, cholla, brittlebush, and cacti. In the dry desert washes, linear patterns of desert dry wash woodlands were observed to contain species of palo verde, ironwood, smoke tree (all of which are short, densely branched trees). There is little- or no-contrast in vegetation color or pattern within the SQRU.

Water. Generally, no water was observed within the SQRU during field reconnaissance in September-October 2005. The nearest body of water is the Colorado River, located approximately one-to seven-miles to the east, but the river is not visible from the pipeline route or from State Route 78.

Color. Colors exhibited in the B-Line right-of-way landscape include tan sand flats, brown background mountains and gray-green scrub brush. During months of rainfall in winter and early spring, the hues of green become brighter and create some contrast with the tan sands and desert varnish. Overall, for the majority of the year, there are only subtle color variations, little-to no-visual contrast or interest.

Adjacent Scenery. Regarding adjacent scenery, throughout the entire path of the B-Line, there is little variation from that of barren desert scrub. The scenery directly adjacent to the B-Line right-of-way from MP 11.7 to 22.3 adds minimally to the visual quality of this landscape.

Scarcity. The desert floor scenery crossed by the B-Line is very common within the southeastern region of the California Desert. The landscape has all the typical appearance of desert dominated by creosote scrub and flat desert landscapes. There are no unique or scarce viewsheds crossed by the right-of-way.

Cultural Modifications. Electrical transmission lines on double wooden poles are immediately adjacent to the B-Line right-of-way. Wooden power poles and associated conductors between them extend the entire length of the SQRU. This intrusion on the landscape constitutes a minor impact to the scenery. Some dirt roads have been cut through the SQRU; however, they generally can only be seen when traveling on them or in close proximity. The visual impacts of cultural modifications are restricted to the electric power line corridor, as well as State Route 78 which generally traverses north-south within 4- to 5-miles of the existing A-Line and proposed B-

Line pipeline route. Cultural modifications add little or no visual variety to the area, and introduce only slight discordant elements.

Overall, no exceptionally striking, intriguing, unique, or visually stimulating landforms, vegetative communities, waterbodies, colors, or adjacent scenery landscapes are crossed by the B-Line corridor in MP 11.7 to 22.3.

Utilizing the BLM VRM system, the scenic quality of the B-Line right-of-way is rated as shown in Table Q-6.

Table Q-6: Scenic Quality Rating Summary for the Existing Pipeline and B-Line Right-of-Way

Key Factor	Possible Rating	B-Line SRQU Rating
Landform	1 to 5	1
Vegetation	1 to 5	1
Water	1 to 5	1
Color	1 to 5	1
Adjacent Scenery	1 to 5	3
Scarcity	1 to 5	1
Cultural Modifications	-4 to 2	0
Total Scenic Quality Score	2 to 32	8

In accordance with BLM Manual Handbook 8410-1 (BLM 1986), the scenic quality of an SQRU with a total score of 8 is “C” meaning low or minimal existing scenic quality.

3.1.2 Sensitivity Level Analysis

Sensitivity levels are a measure of public concern for landscape scenery. Public lands are assigned high, medium, or low sensitivity levels by analyzing the various indicators of public concern. A sensitivity level rating unit (SLRU) is delineated after review of the factors considered discerning public concern; however, there is no standard procedure for delineating SLRUs. The boundaries will depend on the factor that is driving the sensitivity consideration. The factors to be considered in the sensitivity level analysis are as follows:

Type of Users. Visual sensitivity will vary with the type of users. Recreational sightseers may be highly sensitive to any changes in visual quality, whereas workers who pass through the area on a regular basis may not be as sensitive to change.

The users can generally be characterized as individuals who recreate in the winter or reside in the communities of Palo Verde, Yuma, Blythe and El Centro who transit the area. There is a significant amount of vehicular traffic that travels through this vicinity via State Routes 78 and 34. State Route 78 is a connector between Interstate Highway 8 (I-8) and I-10, and State Route

34 is a cut-off through the abandoned Ogilby site to I-8. The dirt roads in the desert valley are used very infrequently. Common recreational opportunities appear to be off-road biking and four wheel driving, as there are signs posted noting that the area is an official OHV area. Workers for the electric utility make use of a dirt road graded to the side of the utility poles and tend to not be sensitive to the surrounding landscape sights.

The Colorado River is located approximately eight to ten miles to the east of the Project.

Where maintenance of visual quality is a major public issue, a rating of high is assigned; where it is a moderate public issue, a rating of moderate is assigned; and where it is a minor public issue, a rating of low is assigned. Given the remoteness of the Palo Verde Mesa and lack of public controversy expressed by residents of Blythe, Yuma or El Centro, it can be concluded that the maintenance of visual quality is a minor public issue. Therefore, the rating for this factor is LOW.

Adjacent Land Uses. For BLM-administered lands from MP 11.7 to 22.3, the land use that surrounds of the Project right-of-way is that of and overhead electrical utility line and open-space desert. There are no agricultural, commercial, residential, or industrial uses anywhere near the B-Line. I-8, to the south, carries people to the nearest cities, which are El Centro, California and Yuma, Arizona. To the north, I-10 carries people to the nearest city, which is Blythe, California. The small community of Palo Verde (population less than 100) is situated near the Imperial-Riverside County line, approximately four miles east of MP 22.3. Very few individuals live in the near vicinity of the Project in the remainder of MP 11.7 to 22.3.

Where maintenance of visual quality to sustain adjacent land use objectives is very important, a rating of high is assigned; where it is moderately important, a rating of moderate is assigned; and where it is slightly important, a rating of low is assigned. Given the uses of lands in the Pilot Knob Mesa, the rating for this factor is low.

Other Factors. All other data, such as research, or studies that include indicators of visual sensitivity, were researched. No other information that includes indicators of visual sensitivity is known to exist relative to the landscapes crossed. The rating for this factor is Low.

Overall Sensitivity Level. The overall sensitivity level is a judgmental process, which requires a careful analysis of all of the sensitivity level factors. The ratings given to each factor are reviewed, and the relationship between factors is analyzed. A high rating in any one factor does not necessarily mean that the overall sensitivity level rating should be high. For example, the rating for type of users might be high but the amount of use might be low. Consequently, the overall rating could be low or moderate.

As with determining the boundaries of the SLRU, the key factor in determining the overall sensitivity level is type of users. The residents of Palo Verde, Blythe, El Centro and Yuma have not expressed any undue concern regarding maintenance of visual quality. The users are sporadic and seasonal, OHV-users, or are simply persons traveling through on State Route 78.

The number of people in the Project area at any one time is very small. Therefore, the overall sensitivity level of the SLRU as shown in Table Q-7 is determined to be low.

Table Q-7: Sensitivity Level Rating for B-Line Route

Factor	Rating Range	B-Line right-of-way Rating
Type of Users	High / Moderate / Low	Low
Amount of Use	High / Moderate / Low	Low
Public Interest	High / Moderate / Low	Low
Low Adjacent Land Users	High / Moderate / Low	Low
Other Factors	High / Moderate / Low	Low
Overall Sensitivity Rating	High / Moderate / Low	Low

3.1.3 Distance Zones

The visual quality of a landscape may be magnified or diminished by the visibility of the landscape from major viewing routes and key observation points. In the VRM system, therefore, distance zones play a key part in visual resource management.

Landscapes are subdivided into three distance zones based on a relative visibility from travel routes or observation points. The three zones are foreground-middleground, background, and seldom seen. Because areas that are closer have a greater effect on the observer, such areas require more attention than do areas that are farther away. Distance zones allow this consideration of the proximity of the observer to the landscape.

Foreground-Middleground Zone. This is the area that can be seen from each travel route (highways, use areas, rivers, or other viewing locations) for a distance of 3 to 5 miles where management activities might be viewed in detail. The outer boundary of this distance zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape. In some areas, atmospheric conditions can reduce visibility and shorten the distances normally covered by each zone. Also, where the foreground-middleground zone from one travel route overlaps the background from another route, the foreground-middleground designation is used.

Background Zone. This is the remaining area that can be seen from each travel route to approximately 15-miles. Areas in the background which are so far distant that the only thing discernible is the form or outline are not included. In order to be included within this distance zone, vegetation should be visible at least as patterns of light and dark.

Seldom-seen Zone. These are areas that are not visible within the foreground-middleground and background zones, and areas beyond the background zones.

The B-Line Route in the Palo Verde Mesa is in the foreground-middleground distance zone. This pipeline route is approximately 2 to 5 miles west of State Route 78 for the majority of the right-of-way on BLM-administered lands. The pipeline right-of-way landscape is not visible because the valley floor is so flat. The slight changes in topography make it so the vast majority of this pipeline route will not be visible at all from most of the miles of highways and county roads. Landscapes visible from these highways can be seen for distances of 15- to 20-miles, or greater, and yet the visual impacts for the existing pipeline right-of-way are very low to non-existent.

3.1.4 Determining Interim VRM Class

Table Q-8 shows the determinations made for the BLM-administered lands crossed by the proposed B-Line from MP 11.7 to 22.3 relative to scenic quality, sensitivity level, and distance zone:

Table Q-8: BLM Rating for B-Line for MP 11.7 to 22.3

Existing Pipeline and B-Line Route	BLM Rating System
Scenic Quality	Minimal (C)
Sensitivity Level	Low (L)
Distance Zone	Foreground-Middleground (FG/MG)
Interim Visual Resource Management Class	Class IV (Major Modification Is Allowed)

In accordance with the table above, the Interim Visual Resource Management Class for BLM-administered lands crossed by the existing pipeline and the proposed B-Line from MP 11.7 to 22.3 is VRM Class IV. Accordingly, changes in any of the basic elements of form, line, color, or texture caused by the proposed Project may dominate the view and may be the major focus of viewer attention without creating a significant visual effect. The level of change to the characteristic landscape may be high. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of the visual landscape. This level of modification to the landscape is not demanded, but is allowed without creating a "significant" visual impact, per the definition of significant in NEPA.

3.1.5 Contrast Rating

The contrast rating system is a systematic process used by the BLM to analyze potential visual impacts of proposed projects and activities. The BLM Handbook H-8431-1, Visual Resource Contrast Rating (BLM 1986b), provides necessary guidance to follow when conducting the ratings. It primarily is intended to assist Bureau personnel who are not formally trained in the design-arts to apply the basic principles of design in the resolution of visual impacts. It is not intended to be the only means of resolving these impacts. It should be used as a guide, tempered by common sense, to ensure that every attempt is made to minimize potential visual impacts.

The basic philosophy underlying visual quality of a landscape depends on the visual contrast created between a project and the existing landscape. The contrast can be measured by comparing the project features with the major features in the existing landscape. The basic design elements of form, line, color, and texture are used to make this comparison and to describe the visual contrast created by the project. The assessment process provides a means for determining visual impacts and for identifying measures to mitigate these impacts.

3.1.6 Degree of Contrast

The rating is completed by determining the degree of contrast (i.e., strong, moderate, weak, or none) for each element. The general criteria and factors in Table Q-9 are used when rating the degree of contrast:

Table Q-9: Visual Contrast Rating

Degree of Contrast	Criteria
None	The element contrast is not visible or perceived.
Weak	The element contrast can be seen but does not attract attention.
Moderate	The element contrast begins to attract attention and begins to dominate the characteristic landscape.
Strong	The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

3.1.7 Key Observation Points for MP 11.7 to 22.3 (Palm Springs BLM Field Office Lands)

The contrast rating is done from the most critical viewpoints. This is usually along commonly traveled routes or at other likely observation points. Factors that should be considered in selection of key observation points are angle of observation, number of viewers, length of time the project is in view, relative project size, season of use, and light conditions.

Relative to the B-Line from MP 11.7 to 22.3, there were no key observation points established because the existing A-Line right-of-way is not visible from any sensitive viewing location, and therefore, the proposed B-Line right-of-way will not be visible either. Potential sensitive viewing locations that were examined include California State Route 78, numerous county roads, and the village of Palo Verde at the Riverside/Imperial County line. The only vantage points that look into this section of the B-Line are along the utility line access road that follows the overhead electric line (see photo 0050 taken 9/22/05).

Form. Implementation of the proposed B-Line will create few, if any, changes in landform, as it will be constructed 25-feet away from the existing A-Line which was constructed in 2002. Because that right-of-way was recently disturbed by construction of the A-Line, then restored after construction, landforms have been restored to natural appearing conditions. Form contrasts will be weak to none.

Line. Implementation of the proposed B-Line will create no changes in line, as the A-Line and B-Line right-of-ways are contiguous. The right-of-way is not visible from KOPs described above. The existing electric utility is the only above-ground facility near the right-of-way, and the B-Line will be completely below-ground from MP 11.7 to 22.3. Line contrasts will be weak to none.

Color. Implementation of the proposed B-Line will create few, if any, changes in color, as it will be constructed 25-feet away from the existing A-Line which was constructed in 2002. Lighter colored soils, from pipeline construction, are slightly evident when driving on the electric utility access roads, but reveal only weak color contrasts. Orange-colored pipeline markers will be visible at intermittent locations along the pipeline, but will not detract from the visual quality of the area.

Texture. Implementation of the proposed B-Line will create few, if any, changes in texture, as it will be constructed 25-feet away from the existing A-Line which was constructed in 2002. Therefore, only a slight amount of existing desert vegetation will be disturbed during right-of-way expansion. The amount of texture contrast will be weak to none.

For BLM-administered lands from MP 11.7 to 22.3, visual contrasts created by the construction, operation and maintenance of the B-Line will be weak-to-none. Because the land-alteration activities of pipeline construction will not be visible from major viewing areas, and because the existing A-Line did not create any visual contrasts or public objection, there will be little or no visual effects from the B-Line to BLM-administered lands.

3.1.8 Determining Whether VRM Objectives Are Met

These contrast ratings can be evaluated against the Interim VRM Class objectives for MP 11.7 to 22.3. For comparative purposes, the four levels of contrast (i.e., none, weak, moderate, and strong) roughly correspond with VRM Classes I, II, III, and IV respectively. This means that a "strong" contrast rating may be acceptable in a Class IV area, but probably will not meet VRM objectives for a Class III area. In making these comparisons, the cumulative effect of all the contrast ratings must be considered. Certain combinations of ratings may indicate there is a stronger overall contrast than the individual ratings show. For example, several "moderate" ratings when viewed in combination may warrant on overall "strong" rating. This is a judgment determination by the visual resource evaluator.

Though experience in construction of the A-Line, it was learned that all of the contrast ratings for landscape elements were "none" or "weak," and therefore potential contrast of visual elements (form, line, texture and texture) caused by trenching and backfilling for the pipeline construction in 2002 did not cause any visual contrasts that were unacceptable after implementation of mitigation measures.

Therefore, based on lessons-learned during construction of the A-Line from MP 11.7 to 22.3, it is the conclusion of this visual resource analysis that the overall contrast rating for the A-Line route is “Weak” to “None”, meaning that the pipeline right-of-way may be seen in some locations but does not attract attention and will meet the objectives of VRM Class II (weak contrast) or that the right-of-way is not visible to the casual observer and will meet the objectives of VRM Class I (no contrast).

Based upon experience gained by constructing the A-Line and the evaluation of this visual resource report, it is the conclusion that construction of the proposed B-Line in the same right-of-way (plus 25-feet of additional temporary construction right-of-way) will result in similar visual effects. Therefore it is the conclusion of this visual assessment that the proposed B-Line right-of-way will be seen in some locations but will not attract attention and will meet the objectives of VRM Class II (weak contrast) or that, in some locations, the right-of-way will not be visible to the casual observer and will meet the objectives of VRM Class I (no contrast).

Consequently, the visual resource management objectives for this Class IV area have been met by the construction that occurred in 2002 and will be met by the proposed the B-Line construction, operation and maintenance.

3.2 VRM EVALUATION FOR YUMA BLM FIELD OFFICE LANDS (MP 22.3 - 33.8)

From MP 22.3 to 33.8, Visual Management Classes have been adopted by the Yuma Field Office of the BLM. Under the current RMP, and under the proposed RMP maps shown at public open houses by the BLM, the B-Line right-of-way is designated as Class III for MP 22.3 to 33.8.

3.2.1 Key Observation Points for MP 22.3 to 33.8 (Yuma BLM Field Office Lands)

The only observation points of the existing A-Line and the proposed B-Line from MP 22.3 to 33.8 are from California State Route 78, which runs in a north-south direction. The pipeline right-of-way is located a distance from the highway, varying from a few-hundred-feet to 1-1/2-miles away. The pipeline and right-of-way crosses under State Route 78 at approximately MP 28.2. Because of the flat terrain, the existing right-of-way does not attract attention, and is not visually evident to passers-by, unless pointed out.

3.2.2 Degree of Contrast

The ratings of visual contrast for the Yuma Field Office BLM Lands are similar to those described above for Palm Springs Field Office BLM Lands.

Form. Implementation of the proposed B-Line will create few, if any, changes in landform, as it will be constructed 25-feet away from the existing A-Line which was constructed in 2002. Because that right-of-way was recently disturbed by construction of the A-Line, then restored after construction, landforms have been restored to natural appearing conditions. Form contrasts will be weak to none.

Line. Implementation of the proposed B-Line will create no changes in line, as the A-Line and B-Line right-of-ways are contiguous. The right-of-way is not visible from KOPs described above. The existing electric utility is the only above-ground facility near the right-of-way, and the B – Line will be completely below-ground from MP 11.7 to 22.3. Line contrasts will be weak to none.

Color. Implementation of the proposed B-Line will create few, if any, changes in color, as it will be constructed 25-feet away from the existing A-Line which was constructed in 2002. Lighter colored soils, from pipeline construction, are slightly evident when driving on the electric utility access roads, but reveal only weak color contrasts. Orange-colored pipeline markers will be visible at intermittent locations along the pipeline, but will not detract from the visual quality of the area.

Texture. Implementation of the proposed B-Line will create few, if any, changes in texture, as it will be constructed 25-feet away from the existing A-Line which was constructed in 2002. Therefore, only a slight amount of existing desert vegetation will be disturbed during right-of-way expansion. The amount of texture contrast will be weak to none.

For BLM-administered lands from MP 22.3 to 33.8, visual contrasts created by the construction, operation and maintenance of the B-Line will be weak-to-none. Because the land-alteration activities of pipeline construction will not attract attention from State Route 78 and there are no other major viewing areas, and because the existing A-Line did not create any visual contrasts or public objection, there will be little or no visual effects from the B-Line in the Yuma Field Office BLM Lands.

3.2.3 Determining Whether Visual Management Class Objectives Are Met

For MP 22.3 to 33.8, these contrast ratings can be evaluated against the Visual Management Class III objectives that were adopted in the 1987 RMP by the Yuma Field Office of BLM (Aaron Curtis, BLM, 2006). Though experience in construction of the A-Line, it was learned that all of the contrast ratings for landscape elements were "none" or "weak," and therefore potential contrast of visual elements (form, line, texture and texture) caused by trenching and backfilling for the pipeline construction in 2002 did not cause any visual contrasts that were unacceptable after implementation of mitigation measures.

Therefore, based on lessons-learned during construction of the A-Line from MP 22.3 to 33.8, it is the conclusion of this visual resource analysis that the overall contrast rating for the A-line route is "Weak" to "None", meaning that the pipeline right-of-way may be seen in some locations but does not attract attention and will meet the Visual Management Class II objectives (weak contrast) or that the right-of-way is not visible to casual observers and will meet the Visual Management Class I objectives (no contrast).

Based upon experience gained by constructing the A-Line and the evaluation of this visual resource report, it is the conclusion that construction of the proposed B-Line in largely the same right-of-way (plus 25-feet of additional temporary construction right-of-way) will result in similar visual effects. Therefore it is the conclusion of this visual assessment that the proposed B-Line right-of-way will be seen in some locations but will not attract attention and will meet the Visual Management Class II objectives (weak contrast) or that, in some locations, the right-of-way will not be visible to the casual observer and will meet the Visual Management Class I objectives (no contrast).

As a result, the Visual Management Class III objectives for this area have been met by the construction that occurred in 2002 and will be met by the proposed construction, operation and maintenance of the B-Line.

3.3 VRM EVALUATION FOR EL CENTRO BLM FIELD OFFICE LANDS (MP 33.8 TO 79.8)

From MP 33.8 to 79.8, Visual Management Classes II and III have been adopted by the El Centro Field Office of the BLM (Larry Caffey, BLM, 2005). Therefore, it is not necessary to proceed through the VRM inventory process, as that has been accomplished by the BLM-RMP process. Table 2.1-2 above describes the Visual Management Class objectives by milepost. Under the current RMP, the B-Line right-of-way is designated as either Class II or Class III for MP 33.8 to 79.8, depending on exact location.

Adjacent features along most of the length of this right-of-way segment include paved highways, paved roads, and desert wash jeep trails, abandoned mines, and electric transmission lines. Over time, the visual contrast of the proposed B-Line will continue to diminish and the visual effect of the installed pipeline will be minimal.

The existing A-Line and the proposed B-Line route are located on the flat desert landscapes of the Pilot Knob Mesa. The right-of-way is seen in the foreground-middleground distance zone. This pipeline route is less than ¼ mile off State Routes 78 or 34 for the majority of the right-of-way on BLM-administered lands from MP 33.8 to 75.2. At approximately MP 75.2, the pipeline crosses under I-8 and from there to its terminus at MP 79.8, it is visible only from desert jeep roads. Even though the pipeline is close to viewers on State Routes 78 and 34, the majority of the pipeline right-of-way landscape is not visible because the valley floor is so flat that it is not discernible. The slight changes in topography make it so the vast majority of this pipeline route will not be visible at all from most of the miles of these highways. Landscapes visible from these highways can be seen for distances of 15- to 20-miles, or greater, and yet the visual impacts for the existing pipeline right-of-way are very low. Views of the pipeline right-of-way from I-8 are negligible.

The greatest visibility of the right-of-way is from the State Route 34 over-crossing bridge of I-8, and the right-of-way is visible as a cleared area adjacent to the highway. Even this clearing does not attract attention, but borrows from the form, line, color and texture of the straight, linear highway.

South of the freeway, the right-of-way is used by the US Border Patrol as a surveillance road, and it is not distinguishable as a pipeline right-of-way. Therefore, the visual contrasts are negligible. At the US/Mexican Border, MP 79.8, the B-Line route will cross under the All-American Canal (AAC).

3.3.1 Key Observation Points for MP 33.8 to 79.8 (El Centro BLM Field Office Lands)

For the A-Line that was constructed in 2002, eight key observation points (KOPs) were established along the pipeline corridor in the spring of 2001 to document the existing landscape setting, as shown in the following Table Q-10 (see photographs in Attachment A). Subsequently, in 2005, photographs were taken from these same KOPs in order to determine the visual effects of the 2002 construction and landscape rehabilitation activities, operation and maintenance activities that may be visually evident, plus any unauthorized OHV usage that may have created a visual disturbance.

Table Q-10: KOP Locations for the A-Line and B-Line

KOP Number	Approximate Milepost	2001 GPS Location UTM NAD 83 Zone 11N		2005 GPS Location UTM NAD 83 Zone 11N	
		Easting	Northing	Easting	Northing
KOP 1	35.8	706810E	3684937N	706712E	3684758N
KOP 2	36.1	705975E	3684282N	706313E	3684407N
KOP 3	36.6	705800E	3683918N	705717E	3683851N
KOP 4	39	703269E	3681053N	703232E	3680993N
KOP 5	42.2	699577E	3677206N	699959E	3677199N
KOP 6	47.3	698744E	3671498N	698359E	3669365N
KOP 7	47.6	698155E	3668799N	698143E	3668799N
KOP 8	48.3	697649E	3667895N	697596E	3667810N

3.3.2 Comparison of KOP Views – 2002 to 2005

The visual effects of underground pipeline construction are sometimes dramatic, and sometimes unnoticeable, depending on various conditions in the existing landscape and the visual elements of the proposed Project – form, line, color, texture and scale. In the case of underground pipeline construction, operation and maintenance in the flat desert landscape from MP 33.8 to 79.8 with only scattered, low-growing scrub vegetation, very little visual contrast was created. The pairs of photographs in Attachment A are a comparison of pre-construction existing scenic quality at each KOP, with a corresponding photograph taken from approximately the same location, showing the current scenic quality and visual conditions after construction.

3.3.3 Degree of Contrast

The photographs in Appendix A clearly show that, as seen from KOPs 1-8, there are no introduced contrasts of form, line, color, or texture that were created by the A-Line. Visual results of the B-Line will be the same.

3.3.4 Determining Whether VRM Objectives Are Met

Visual Management Class II and III objectives have been met by the A-Line construction that occurred in 2002 and will be met by the proposed B-Line construction, following implementation of restoration measures.

3.4 IMPACT SUMMARY

The visual effects of the cleared right-of-way vary along the proposed routes, depending on landscape terrain, vegetative patterns, and manmade modifications.

3.4.1 B-Line MP 0.0 to 11.7 and BEI-Lateral

In the agricultural areas of the Palo Verde Valley, visual impacts will be temporary and very minor. The terrain is flat and agricultural operations will resume following construction. Construction activity will be a short-term visual intrusion to residents along 18th Avenue. Long term-impact will be unnoticeable because the pipeline will, for the most part, be located in county rights-of-way requiring little or no clearing. The crossing of the Colorado River will be accomplished by directional drilling, and setbacks from the river will protect existing vegetation. Therefore, no significant visual impacts will occur. Lands in this route segment are not administered by the BLM, and therefore, have no BLM-VRM classification.

3.4.2 B-Line MP 11.7 to 22.3 (Palm Springs BLM Field Office Lands)

In this flat desert landscape environment, a low degree of visual impact will occur initially and be further reduced over time. Visibility resulting from the very slight contrast in soil color and vegetative pattern between the right-of-way and adjacent areas will be offset by limited viewing afforded by areas with flat to low topographic relief and views that include existing manmade features of electric transmission lines and appurtenant access roads.

3.4.3 B-Line MP 22.3 to 29.7 and 31.5 to 33.8 (Yuma BLM Field Office Lands)

In this desert landscape environment, a low degree of visual impact will occur initially during construction of the B-Line, and after mitigation the weak contrasts will be further reduced over time. Visibility resulting from contrast in soil color and vegetative pattern between the right-of-way and adjacent areas will be partially offset by limited viewing afforded by areas with flat to low topographic relief and views that include existing manmade features, including California State Route 78, jeep trails, and various outfall drains in area. Adjacent features along most of the length of this route segment include paved roads and desert wash jeep trails, levees, canals, electric distribution, and high voltage electric lines. Over time the visual contrast of the proposed Project will continue to diminish and the visual effect of the installed pipeline will be minimal.

The proposed pipeline, at the location proposed, is consistent with the VRM Class III objectives in this area. Under this designation, the existing character of the landscape should be partially retained (Class III), and the overall level of change to the characteristic landscape should be low. The visual impacts resulting from the proposed pipeline will be within these guidelines.

3.4.4 B-Line MP 29.7 to MP 31.5 (Yuma BLM Field Office Lands)

In this route segment, the pipeline will cross hilly to flat terrain with a backdrop created by the steeper slopes of the Palo Verde Mountains to the west. In 2002, site grading to prepare for pipeline installation and maintenance was accomplished during the construction of the A-Line. The visual effects of pipeline construction in this right-of-way were minimal, and generally did not create any visual contrast with the surrounding landscape. Viewing locations and conditions of the B-Line will be the same as for the A-Line. Potential viewing locations include from State Route 78, which is parallel to the proposed pipeline route. Few longitudinal views down the right-of-way occur. Most often, glimpses of the right-of-way can be seen while traveling State Route 78, with the dominant visual feature being the mid distance views of the Colorado River bottom covered by the expanse of thick tamarisk. Tamarisk is a species of low-growing, densely branched evergreen trees that effectively screen the landscape from view. The highway alignment in this area is curvilinear with vertical changes in grade, and the two-lane highway has one single lane in either direction. All of these factors compete with the viewer's attention. Overall, there was not a large degree of visual contrast created by the construction of the A-Line, and construction of the B-Line will result in similar visual effects. Over time the impact will continue to diminish as vegetation softens the few views of the right-of-way.

The existing pipeline alignment was chosen to limit environmental and visual impacts. The Proposed B-Line will be installed 25-feet away from the existing pipeline in the same alignment. There will be no further visual impacts to form, line, color, and texture in the landscape. No visual mitigation is planned beyond the restoration measures proposed (see CMR Plan, Appendix A of the Environmental Report).

3.4.5 B-Line MP 33.8 to 79.8 (El Centro BLM Field Office Lands)

In this desert landscape environment, a very low degree of visual impact will occur initially during construction of the B-Line, and after implementation of mitigation measures, the weak visual contrasts will be further reduced. Visibility resulting from contrast in soil color and vegetative pattern between the right-of-way and adjacent areas will be partially offset by limited viewing afforded by areas with flat to low topographic relief as seen from California State Routes 78 and 34, and I-8.

The proposed pipeline, at the location proposed, is consistent with the VRM Class II and III objectives of this area. Under this designation, the existing character of the landscape should be retained (Class II), and partially retained (Class III), and the overall level of change to the characteristic landscape should be low. The visual impacts resulting from the proposed B-Line pipeline will be within these guidelines.

4.0 IID LATERAL PIPELINE TO EL CENTRO

For the purposes of visual resource management, BLM-administered lands crossed by the IID Lateral can be subdivided into three SQRUs. Those three SQRUs are the Pilot Knob Mesa (MP 0.0 to 0.5), Algodones Dunes (MP 0.5 to 8.1) and the East Mesa (MP 8.1 to 27.6). Following the methodology presented above for the B-Line (see Section 3.0), this report assesses compliance with Visual Resource Management Classes established in BLM RMP and Recreation Area Management Plans (RAMP) for the lands crossed by the IID Lateral (BLM 1980; 2003).

A fourth landscape crossed which is not administered by BLM, is the segment of the pipeline located in the Imperial Valley (MP 27.6 to 45.6).

From MP 0.0 to 7.9, the IID Lateral will cross the Imperial Sand Dunes Recreation Area (ISDRA). The BLM has adopted an objective of Visual Resource Management Classes II and III for the ISDRA by correlating the ISDRA Multiple-Use Classifications with the VRM Classes, as shown in Table Q-11.

Table Q-11: VRM Class Designations by Milepost for IID Lateral Pipeline

Mileposts	BLM Field Office	BLM Multiple-Use Class Designation	Visual Resource Management Class Designation
0.0 – 2.3	El Centro	Limited (L)	VRM Class II
2.3 – 3.0	El Centro	Moderate (M)	VRM Class III
3.0 – 7.9	El Centro	Intensive (I)	VRM Class IV
7.9 – 27.6	El Centro	Limited (L)	VRM Class II

4.1 PILOT KNOB MESA SQRU (MP 0.0 TO 0.5)

The Pilot Knob Mesa was fully described in the analysis of the A-Line and B-Line. The dominant view of the landscape through which the right-of-way passes from MP 0.0 to 0.5 is a flat desert floor, covered with widely scattered creosote bush scrub and will parallel a multitude of overhead electrical transmission lines on wooden poles and steel lattice towers. This portion of the IID Lateral starts at a new Main Line Valve and tap to the mainline near Ogilby Road (MP 74.5 of the B-Line) and ends at the transition to Algodones Dunes (MP 0.5). The VRM Class objective for the Pilot Knob Mesa is Class II, where proposed activities should remain subordinate to the characteristic landscape. Because the proposed IID Lateral will be an underground facility and will parallel existing overhead transmission lines, the proposed Project will create no significant adverse visual effects upon the landscape in the Pilot Know Mesa.

4.1.1 Key Observation Points for MP 0.0 to 0.5 (El Centro BLM Field Office Lands)

There is only one key observation point looking into this segment of the IID Lateral, located on State Route 34 (the Ogilby Road) at the interchange of I-8, looking west through the corridor of overhead transmission lines (Table Q-12). The lateral pipeline will be constructed as an underground facility in a right-of-way adjacent and parallel to existing overhead transmission lines. This freeway interchange has an elevated viewer platform created by the overpass of Ogilby Road. Because this segment of the IID Lateral Pipeline is so short, only one KOP was necessary to determine the visual effects of the proposed Project.

Table Q-12: KOP Location for the IID Lateral through the Pilot Knob Mesa

KOP Number	Approximate Milepost	2005 GPS Location UTM NAD 83 Zone 11N	
	MP	Easting	Northing
KOP 9	0.3	702642E	3627024N

4.1.2 Degree of Contrast

The basic philosophy underlying visual quality of a landscape depends on the visual contrast created between a project and the existing landscape. For the IID Lateral through the Pilot Knob Mesa, the contrast can be measured by comparing the project features with the major features in the existing landscape. The basic design elements of form, line, color, and texture were used to make this comparison and to describe the visual contrast created by the project. The assessment process provides a means for determining visual impacts and for identifying measures to mitigate these impacts.

4.1.3 Contrast Rating for the Proposed IID Lateral in Pilot Knob Mesa SQRU (MP 0.0 to 0.5)

The proposed IID Lateral from MP 0.0 to 0.5 will cross through the flat desert, open-space landscapes of the Pilot Knob Mesa administered by the BLM, parallel to overhead transmission lines. Following is an assessment of contrasts in form, line, color, and texture that will be caused by the IID Lateral.

Form. Implementation of the proposed IID Lateral will create no changes in landform, as it will be constructed on flat terrain parallel to existing transmission lines. Form contrasts will be weak to none.

Line. Implementation of the proposed IID Lateral will create no changes in line, as the transmission lines right-of-way and IID Lateral right-of-way are parallel and contiguous. Newly created line contrasts will be weak to none.

Color. Implementation of the proposed IID Lateral will create few, if any, changes in color, as it will be constructed parallel to the existing transmission line right-of-way. Lighter colored soils from pipeline construction will be indistinguishable, and not evident, as compared to transmission line access roads, and will result in no additional color contrasts. Orange-colored pipeline markers will be visible at intermittent locations along the pipeline, but will not detract from the visual quality of the area.

Texture. Implementation of the proposed IID Lateral will create few, if any, changes in texture, as it will be constructed parallel to the existing transmission line right-of-way. Therefore, only a slight amount of existing desert vegetation will be disturbed during construction. The amount of texture contrast will be weak to none.

For BLM-administered lands from MP 0.0 to 0.5, visual contrasts created by the construction, operation and maintenance of the IID Lateral will be weak-to-none. There will be little or no visual effects from the IID Lateral to BLM-administered lands.

4.1.4 Determining Whether VRM Objectives Are Met

The contrast ratings were compared with the objectives of VRM Class II. Though experience in construction of the A-Line, it was learned that all of the contrast ratings for landscape elements were "none" or "weak," and therefore potential contrast of visual elements (form, line, texture and texture) caused by trenching and backfilling for the pipeline construction did not cause any visual contrasts that were unacceptable after implementation of restoration.

The overall contrast rating for the IID Lateral through the Pilot Knob Mesa is "None" to "Weak". Consequently, the visual resource management objectives for this Class II area will be met by the construction, operation and maintenance of the proposed IID Lateral Pipeline. No mitigation measures are planned beyond the proposed restoration.

4.2 ALGODONES DUNES SQRU (MP 0.0 TO 7.9)

A very unique and interesting landscape feature on BLM-administered lands that will be crossed by the IID Lateral is the Algodones Dunes, also known as the Imperial Sand Dunes Recreation Area (ISDRA).

According to the BLM RAMP, "The ISDRA, located in eastern Imperial County in Southern California, offers outstanding opportunities for OHV recreation within the BLM's California Desert Conservation Area. The approximately 159,072-acre ISDRA contains the largest mass of sand dunes in California, covering an area more than 40 miles long and averaging 5 miles in width. The ISDRA is considered a world-class OHV area and it represents one of the most popular OHV areas in the western United States. It is a well-known area to local residents and the thousands who visit each year from the southwestern United States and beyond. The ISDRA is the most heavily and intensively used OHV recreation area in the California Desert

District with over 1.4 million OHV visitors per year. In addition, the ISDRA is recognized for its frequent use as a backdrop for commercials and movies because of its unique beauty and landscape. The ISDRA is also recognized for providing unique habitat for several endemic and sensitive plant, insect, and animal species and habitats" (BLM 2003). The RAMP recognizes the unique scenic attributes of the dunes.

Visually evident man-made modifications in the vicinity of the pipeline route in the Algodones Dunes include I-8, the AAC, new Coachella Canal, and several wood-pole and steel-lattice-tower electric transmission lines traversing the Dunes in an east-west direction. The abandoned Coachella Canal to the west and the railroad to the east are not visually prominent man-made features.

According to the ISDRA RAMP, "the proximity of the Imperial Sand Dunes Recreation Area to private land and the wilderness area requires that the BLM carefully manage the recreation, natural, and cultural resources and corresponding resource values (such as "scenic values") within the planning area to reduce potential impacts to these areas" (BLM 2003).

4.2.1 Existing Scenic Quality

The BLM VRM system utilizes the following factors to establish existing scenic quality: landform, vegetation, water, color, adjacent scenery, scarcity and cultural modifications.

Landform. Regarding landforms, the RAMP adequately explains scenic quality of the Dunes, as follows. "The dune system is situated on a relatively flat plain. The plain has an elevation of approximately 50 feet above sea level. On the west, the plain is called East Mesa because it is east of Imperial Valley. On the east, the plain is called Pilot Knob Mesa. The dunes reach heights of 300 feet above the plain, and include classic examples of several different types of dune morphology. The sand dunes are thought to have originated from the beach sands of ancient Lake Cahuilla, a water body created by episodic diversions of the Colorado River into the Imperial Valley instead of the Gulf of California. The Imperial Dunes have formed primarily as a result of opposing seasonal winds. Winter winds come from the northwest, but often reverse to the southeast in summer. The stronger winter winds are slowly pushing the dune system southeastward. The east and west sides of the dunes system differs substantially in character. West side sands are composed of material that is generally heavier and coarser than the lighter, finer sands carried further east in the prevailing winds. The coarse sands form the largest, tallest dunes, which are located in the western two-thirds of the dune system. These constitute the 'primary dunes.' East of the primary dunes are the 'secondary dunes.' These dunes are smaller dunes composed of finer sands and having more vegetation cover."

Vegetation. Vegetation on the dunes is very sparse on the westerly side and top of dunes. East of the primary dunes, and transitioning into the Pilot Knob Mesa, vegetation is widely scattered creosote bush scrub. A corridor of vegetation, mostly non-native, water-loving species, follows the lower banks of the AAC, and creates a pleasant visual contrast of blue, green and tan colors.

Water. The only water in the Algodones Dunes SRQU is found in the All American Canal. The proposed pipeline will cross under the All American Canal and I-8 at approximately MP 2.3 and again at MP 7.9.

Color. Colors exhibited in the IID Lateral right-of-way landscape include light-tan to white sand dunes, gray-green Creosote bush scrub, medium-green, non-native species along the blue waters of the AAC.

Adjacent Scenery. Regarding adjacent scenery, throughout the path of the IID Lateral in the Algodones Dunes, vistas are available to the East Mesa and the Pilot Knob Mesa, especially when the route is slightly elevated from MP 4 to 6. The contrast created by the 300-feet tall sand dunes situated on a flat desert plane is dramatic.

Scarcity. The sand dunes crossed by the IID Lateral are very unique, and comprise the largest dune formations in southwestern United States.

Cultural Modifications. Electrical transmission lines are very visually evident in the vicinity of the proposed pipeline route and as viewed from the I-8 corridor. Additionally, the AAC, I-8, Grays Well Road, Buttercup Campground, Midway Campground, and the Plank Road monument are present and in the immediate vicinity of the proposed pipeline. All of these cultural modifications are very visually evident in the characteristic landscape. Steel lattice towers and wooden pole transmission lines create strong linear contrasts with the horizontal landforms of the dunes, and they extend the entire length of the crossing through this SQRU. This intrusion on the landscape constitutes a noticeable impact to the scenery. A multitude of tracks left in the sand by OHV also have created a visible cultural modification.

4.2.2 Existing Sensitivity Levels

Sensitivity levels are a measure of public concern for landscape scenery. Public lands are assigned high, medium, or low sensitivity levels by analyzing the various indicators of public concern. The factors to be considered in the sensitivity level analysis include type of users, adjacent land uses and other factors.

Type of Users. Visual sensitivity will vary with the type of users. Recreational sightseers may be highly sensitive to any changes in visual quality, whereas workers who pass through the area on a regular basis may not be as sensitive to change. According to the Imperial Dunes RAMP, “the Imperial Sand Dunes Recreation Area (ISDRA) is the most popular OHV area in the southwest United States. It encompasses the most intensively visited recreational area in the California Desert Conservation Area (CDCA). It provides a unique, world-class recreation opportunity” (BLM 2003). The primary recreational use is camping and the use of OHV, principally dune buggies, quads and all terrain vehicles. Camping in recreation vehicles (RVs) and vacation trailers is a predominant use in the Algodones Dunes, also known as the Imperial Sand Dunes Recreation Area. Buttercup Campground, Midway Campground and Dune Buggy Flats receive extreme recreation use; typically 100,000 people or more will recreate on the dunes during the cooler autumn and winter months. Other recreation uses include utilization of the Rest Area in the median of I-8. Non-recreation uses include canals and roads, filming, conservation activities, and right-of-way use for utility lines.

Adjacent Land Uses. For BLM-administered lands, the land use that surrounds the IID Lateral route through the dunes is dominated in the winter by OHV related uses. Off season, adjacent land uses are those of open-space desert plains. The Plank Road monument is adjacent to the proposed right-of-way but will not be affected by construction, operation or maintenance of the IID Lateral pipeline. There are no agricultural, commercial, residential, or industrial uses anywhere in the vicinity of the IID Lateral and the dunes. There are, however, several utility and infrastructure uses that are located in the same corridor as the proposed IID Lateral. I-8 carries people to the nearest cities, which are El Centro, California and Yuma, Arizona. The AAC parallels and crosses under I-8 and several high voltage electric transmission lines are present.

The number of people using the ISDRA at any one time is extremely high in the cooler months of the year; yet is rather small during the hottest seasons. Recreationists are attracted to the unique scenery, and travelers on I-8 experience the scenery of the dunes as a unique visual relief while traveling through vast expanses of desert plains that exhibit minimal visual variety.

4.2.3 Distance Zones

The visual quality of a landscape may be magnified or diminished by the visibility of the landscape from major viewing routes and key observation points. In the VRM system, therefore, distance plays a key part in visual quality management. Landscapes of the ISDRA were subdivided into three distance zones based on a relative visibility from travel routes or observation points. The three zones are foreground-middleground, background, and seldom seen. Because areas that are closer have a greater effect on the observer, such areas require more attention than do areas that are farther away. Distance zones allow this consideration of the proximity of the observer to the landscape. Because recreationists travel cross-country on OHVs, and I-8 crosses through the dunes, the entire area of the dunes in the vicinity of the IID Lateral is visible as foreground/middleground, giving the greatest exposure and visibility to the landscape.

4.2.4 Determining VRM Classes

As previously stated, visual resource management classes are established through the RMP process for all BLM-administered lands. However, the BLM has not formally inventoried the lands within the ISDRA, nor has it given those lands Visual Management Classifications, according to the VRM Program. However, these ratings were developed based entirely on the multiple use classes in the RAMP-FEIS for the ISDRA (Larry Caffey, BLM, 2005).

The BLM currently manages the lands within the ISDRA according to the Multiple-Use Classes listed in the CDCA. VRM Class V was not assigned to any of the Multiple-Use Classes because none of the lands in the ISDRA have been degraded to the point where they require rehabilitation.

Figure 3.7-1 in the RAMP FEIS depicts the VRM Classes associated with the Multiple-Use Classes that are assigned to ISDRA lands by management areas. Although the management areas do not exactly fall within the multiple use class, geographically, the following table will provide a general overall classification of the management areas as a whole. (However, a visual assessment conducted without regard to the multiple use class may result in different classifications, such as Mammoth Wash Management Area will most likely be VRM Class II.) As shown in Table Q-13, the popular dune areas and campgrounds within the ISDRA also can be categorized according VRM Classes.

Table Q-13: Visual Resource Management Classes of OHV Use and Camping Areas

VRM Class I	VRM Class II	VRM Class III	VRM Class IV
North Algodones Dunes Wilderness	Dune Buggy Flat Management Area	Glamis Management Area	Mammoth Wash Management Area
	Adaptive Management Area		Buttercup Management Area
	Ogilby Management Area		Gecko Management Area

Visual Management Classes for IID Lateral in Algodones Dunes. Based on Multiple-Use Classes in the ISDRA-RAMP, the visual management class for the IID Lateral in the Algodones Dunes SQRU is Class II. In Class II landscapes, changes in any of the basic elements (form, line, color, texture) caused by the proposed Project should not be evident in the characteristic landscape. Contrasts can be visible, but must not attract attention.

From MP 0.0 to 7.9, the proposed IID Lateral will cross under open-space sand dunes, OHV recreation sites, campgrounds in the dunes, and will directionally drilled and/or bored under the All American Canal and I-8 at several locations.

4.2.5 Key Observation Points.

Contrast ratings were done from the most critical viewpoints in the Imperial Dunes Recreation Area. In 2005, five key observation points were established along the proposed IID Lateral pipeline corridor (see Table Q-14), and photographs were taken from these KOPs in order to analyze in detail the potential visual effects of the construction, operation, maintenance, and landscape rehabilitation activities (see Attachment B).

Table Q-14: Key Observation Point Locations in the Algodones Dunes SQRU

KOP Number	Approximate Milepost	2005 GPS Location UTM NAD 83 Zone 11N	
		Easting	Northing
KOP 10	1.8	700250E	3625979N
KOP 11	3.5	698466E	3624346N
KOP 12	6.5	697399E	3623878N
KOP 13	5.3	695770E	3622776N
KOP 14	6.5	694831E	3621331N

As seen from KOP 10, the IID Lateral will enter the Algodones Dunes SQRU at the location where the landscape transitions from the flat mesa to the beginning of the small dunes at MP 0.5. The pipeline will be drilled and bored under both the AAC and I-8 freeway. The horizontal directional drill (HDD) pullback area is partially screened from view by the landforms of the sand dunes. After construction, there will be no visual effect of the pipeline as seen from KOP 10.

As seen from KOP 11, the proposed IID Lateral will be constructed adjacent to and parallel to the H-frame wooden transmission lines. The pipeline will be placed in a trench dug in the sand, and then backfilled. Because of the blowing and drifting nature of the sand, there will be no visible evidence of construction shortly after construction. No-evidence will remain of the pipeline after construction.

KOPs 12 to 14 are located on the south side of I-8, looking from Gray's Well Road. As seen from KOP 12, the pipeline will be located north of both the Gray's Well Road and the H-frame wooden poles, and adjacent to the I-8 right-of-way. The pipeline will be placed in a trench dug in the sand, and then backfilled. Because of the blowing and drifting nature of the sand, there will be no visible evidence of construction shortly after construction. No-evidence will remain of the pipeline a short time after construction. The only above-ground facility of the pipeline in the Algodones Dunes will be Mainline Valve No. 2 which will be located at MP 7.6. The valve will be visually evident, but in an area of limited public access between I-8 and the ACC.

As seen from KOP 13, there is a large area of sand dunes between Gray's Well Road and I-8, in which an H-frame transmission line runs parallel to I-8. The sand dunes on the horizon to the north of the freeway are covered with widely scattered, low-growing scrub brush. The pipeline will be placed in a trench dug in the sand, and then backfilled. Because of the blowing and drifting nature of the sand, there will be no visible evidence of construction shortly after construction.

As seen from KOP 14, the proposed pipeline will cross under the AAC at the western edge of the Algodones Dunes. From this vantage point, the expansive, horizontal landscapes of the East Mesa are visible. The tall single-mast tower, visible between the H-frame transmission pole and the white vacation-trailer on I-8, is located at the junction of the Coachella Canal and the

AAC. The proposed pipeline laydown area will be in the creosote scrub bush area almost directly behind the H-frame transmission pole.

On the south side of the ACC, landforms are flat to gently sloping, tan colored sand. The vegetation is widely scattered low growing gray-green creosote bush scrub and gray-green sage. After construction, there will be no visible evidence of the IID Lateral from KOP 14, because wind-driven sand, and extensive OHV use will obliterate any trace of construction activities.

On the north side of the ACC, the pipeline laydown area will be cleared and the pipeline will be placed by HDD. The trench will then be backfilled. Because of the blowing and drifting nature of the sand, there will be very little to no visual evidence of the pipeline shortly after construction.

4.2.6 Contrast Rating for the Proposed IID Lateral in ISDRA SQRU (MP 0.0 to 7.9)

The contrast rating of the proposed IID Lateral pipeline through the Algodones Dunes was completed by determining the degree of contrast (i.e., strong, moderate, weak, or none) for each element (form, line, color and texture). The general criteria and factors in Table Q-9 were used when rating the degree of contrast:

Form. Implementation of the proposed IID Lateral will create no changes in landform, as it will be constructed in the sand dunes of the ISDRA, all of which rapidly reform and re-sculpt during wind storms. There will be no form contrasts.

Line. Implementation of the proposed IID Lateral will create no changes in line, as the pipeline will be buried and sand dunes will be re-sculpted by winds on a regular basis. There will be no line contrasts.

Color. Implementation of the proposed IID Lateral will create no changes in color, as the natural colors of sand dunes will be dominant after construction, resulting in weak to no color contrasts. Orange-colored pipeline markers will be visible at intermittent locations along the pipeline, but will not detract from the visual quality of the area.

Texture. Implementation of the proposed IID Lateral will create no changes in texture, as it will be constructed in sand dunes parallel to the existing transmission line right-of-way. The amount of texture contrast will be none.

For BLM-administered lands from MP 0.0 to 7.9, visual contrasts created by the construction, operation and maintenance of the IID Lateral will be weak-to-none. There will be little or no visual effects from the IID Lateral to BLM-administered lands.

4.2.7 Determining Whether VRM Objectives Are Met

The contrast ratings were compared with the objectives for the VRM Classes II and III in the ISDRA RAMP. The potential contrast of visual elements (form, line, texture and texture) caused by trenching and backfilling for the pipeline construction will not cause any visual contrasts that will be unacceptable after implementation of mitigation measures. The sand dunes have a much higher visual absorption capability than the rocky desert landscapes that were traversed in 2002 by construction of the A-Line. The period of time that it will take to "heal the landscape" in the dunes is extremely short, because of wind-driven sand and wheel traffic of OHV users.

Therefore, the overall contrast rating for the IID Lateral through the Algodones Dunes SQRU is "None" to "Weak." Consequently, the visual resource management objectives for this VRM Class II and III area will be met by the construction, operation and maintenance of the proposed IID Lateral Pipeline.

Because there will not be a significant visual impact created by pipeline construction, operation or maintenance in the Algodones Dunes, no mitigation measures are needed.

4.3 EAST MESA SQRU (MP 7.9 TO 27.6)

The dominant view of the landscape through which the IID Lateral passes is an extensive, visually flat desert plain covered with creosote bush scrub. There are no interesting landscape features on BLM-administered lands in the East Mesa, only a flat landform, uniform brush cover, no water, no rock outcrops. Background views to the east reveal the Chocolate Mountain Range in the background of the Lateral, and views to the east reveal a flat plain on the horizon.

4.3.1 Existing Scenic Quality

The BLM VRM system utilizes the following factors to establish existing scenic quality: landform, vegetation, water, color, adjacent scenery, scarcity and cultural modifications.

Landform. Regarding landform, the valley floor generally slopes from northeast to southwest, but it is visually flat and monotonous. A small amount of elevation change was observed during field investigations, but the general public will perceive this landscape as extremely "flat."

Vegetation. The vegetative pattern on the East Mesa is uniformly scattered, low-growing and sparse, gray-green creosote bush scrub. There is little or no contrast in vegetation within the East Mesa SQRU.

Water. No water was observed within the East Mesa SQRU along the IID Lateral.

Colors. Colors exhibited in the IID Lateral landscape include tan sand flats and gray-green scrub brush. Overall, for the majority of the year, there are only subtle color variations, little- to no-visual contrast or interest.

Adjacent Scenery. Regarding adjacent scenery, throughout the entire path of the IID Lateral, there is little to no variation from that of flat, barren desert scrub.

Scarcity. The desert floor scenery crossed by the IID Lateral is very common within the southeastern region of California Desert, and is almost archetypical of the public's perception of "desert." The East Mesa has all the typical appearance of the desert landscape dominated by creosote bush scrub and flat desert landscapes. There are no unique or scarce viewsheds crossed by the right-of-way.

Cultural Modifications. Electrical transmission lines, communications and cell-phone towers can be seen from certain viewpoints within sight of the IID Lateral. These intrusions in the landscape constitute a minor impact to the scenery.

Overall, no exceptionally striking, intriguing, unique, or visually stimulating landforms, vegetative communities, water-bodies, colors, or adjacent scenery landscapes are crossed by the IID Lateral.

4.3.2 Existing Sensitivity Levels

Type of Users. The users of East Mesa can generally be characterized as motorists traveling on I-8. I-8 carries interstate traffic between San Diego, California to the west and Phoenix, Arizona to the east. Additionally, it carries local traffic between El Centro, California to the west and Yuma, Arizona to the east. Users also exit at Gordon's Well to access the nearby campground, Dune Buggy Flats and the RV Park.

Adjacent Land Uses. For BLM-administered lands, the land use that surrounds of the Project right-of-way is that of open-space desert and the East Mesa Area of Critical Environmental Concern. The only commercial or residential uses located near this Project site are Pair-A-Dice (a roadside establishment), Gordon's Well RV Park, and the deserted Brock Research Center, all of which are located on Evan Hewes Highway immediately adjacent to I-8.

4.3.3 Distance Zones

Following the distance zone criteria given for previous SQRUs, it was determined that all of the IID Lateral right-of-way from MP 8.1 to 27.6 will be in the foreground-middleground distance zone of I-8 and Evan Hewes Highway. Because areas that are closer to observers have a greater potential for adverse visual effects, such areas require more attention than do areas that are farther away. Distance zones allow this consideration of the proximity of the observer to the landscape.

4.3.4 Determining VRM Classes

As previously stated, visual resource management classes are established through the RMP process for all BLM-administered lands, but the BLM has not adopted any visual management classes for East Mesa. Therefore, visual resource management classes are correlated to the Multiple-Use Classes for the East Mesa (Larry Caffey, BLM, 2005).The proposed IID Lateral Pipeline will cross the East Mesa following Evan Hewes Highway on open-space desert lands administered by the BLM.

4.3.5 Key Observation Points.

The contrast rating was prepared from the most critical viewpoints: I-8, Evan Hewes Road, Pair-A-Dice and Gordon's Well RV Park (Table Q-15).

Table Q-15: Key Observation Point Location for the IID Lateral at East Mesa

KOP Number	Approximate Milepost.	2005 GPS Location UTM NAD 83 Zone 11N	
		Easting	Northing
KOP 15	8.5	691478E	3620934N
KOP 16	8.6	691309E	3620998N
KOP 17	8.5	691478E	3620934N
KOP 18	20.6	672517E	3623169N

As seen from KOP 15, the IID Lateral Pipeline will enter the East Mesa SQRU near the Gordon's Well exit of I-8. The pipeline will be directionally drilled under the AAC from this location. The site where the pipeline construction will occur has no occupancy, no topographic relief, only scattered creosote bush scrub, no rockforms and no water features.

On the north side of the AAC, the pipeline laydown area will be cleared and the pipeline will be placed by HDD. The trench will then be backfilled. Because of the blowing and drifting nature of the sand and the rapid regeneration of sand dune vegetative communities, there will be very little- to no-visual evidence of the pipeline shortly after construction.

As seen from KOP 16, the Pair-A-Dice roadside establishment is a local landmark, comprised of paved parking, spent-military shells as parking barriers, grass-thatched roof over outdoor seating, and a restaurant-bar. The large tower to the right is a cell phone tower. The proposed IID Lateral will be located at the south edge of the pavement of Evan Hewes Highway, in front of the restaurant/bar. Once the pipeline is installed and the road repaved, the pipeline will not be visible from this vantage point. This view is looking toward the northwest.

As viewed from Evan Hewes Highway at KOP 17, looking northwest, Gordon's Well RV Park is a pleasant landscape setting in the desert that offers tall, green shade trees, paved roads, colorful red and pink flowering shrubs, and green lawns. The proposed IID Lateral will be located at the edge of pavement of the Evan Hewes Highway, and after construction and road repaving, the pipeline will not be visible.

For the next approximately 19 miles the IID Lateral will be constructed at the south and then north edge of pavement of Evan Hewes Highway, on BLM-administered land, as shown in KOP 18. Soil color is light-tan and vegetation is widely scattered, light-green creosote bush scrub. There are no rock formations or water features in this desert landscape of sameness. Because of the high winds in this area, the drifting nature of the desert sands, and the wide spacing of the creosote bush scrub, there will be very little to no visual evidence of the pipeline shortly after construction. Likewise, because of access afforded by Evan Hewes Road, the operation and maintenance of the proposed IID Lateral will have no adverse effect on the visual resources of these BLM-administered lands.

4.3.6 Degree of Contrast

The rating is completed by determining the degree of contrast (*i.e.*, strong, moderate, weak, or none) for each element. The general criteria and factors shown in Table Q-9 are used when rating the degree of contrast:

Form. Implementation of the proposed IID Lateral will create no changes in landform, as it will be constructed on flat terrain parallel to Evan Hewes Road and I-8. There will be no form contrasts.

Line. Implementation of the proposed IID Lateral will create no changes in line, as the IID Lateral right-of-way will be parallel to Evan Hewes Road. There will be no line contrasts.

Color. Implementation of the proposed IID Lateral will create few, if any, changes in color, as it will be constructed parallel to Evan Hewes Road and I-8. Minimal vegetative clearing of the right-of-way and lighter colored soils from pipeline construction will create weak-to-no color contrasts. Orange-colored pipeline markers will be visible at intermittent locations along the pipeline, but will not detract from the visual quality of the area.

Texture. Implementation of the proposed IID Lateral will create few, if any, changes in texture, as it will be constructed parallel to Evan Hewes Road and I-8. Therefore, only a slight amount of existing desert vegetation will be disturbed during construction. The amount of texture contrast will be weak to none.

For BLM-administered lands from MP 7.9 to 27.6, visual contrasts created by the construction, operation and maintenance of the IID Lateral will be weak-to-none. There will be little or no visual effects from the IID Lateral to BLM-administered lands.

4.3.7 Determining Whether VRM Objectives Are Met

The contrast ratings are compared with the VRM objectives for the East Mesa. For comparative purposes, the four levels of contrast (i.e., none, weak, moderate, and strong) roughly correspond with VRM Classes I, II, III, and IV respectively.

Though experience in construction of the North Baja Pipeline in 2002 (A-Line), it was learned that all of the contrast ratings for landscape elements were "none" or "weak," and therefore potential contrast of visual elements (form, line, texture and texture) caused by trenching and backfilling for the pipeline construction did not cause any visual contrasts that were unacceptable after implementation of mitigation measures. The landscapes that will be crossed by the IID Lateral are even more uniform than those crossed in 2002 by the A-Line, and therefore, it was determined that the visual effects will be "None".

Consequently, the visual resource management objectives for this area in East Mesa will be met by the proposed Project. Because there will not be a significant visual impact created by pipeline construction, operation or maintenance in the East Mesa, no mitigation measures are needed beyond those proposed for restoration.

4.4 IMPACT SUMMARY

IID Lateral MP 0.0 to MP 7.9 – The approximately 159,072-acre ISDRA contains the largest mass of sand dunes in California, covering an area more than 40 miles long and averaging 5 miles in width. The ISDRA is considered a world-class OHV area and it represents one of the most popular OHV areas in the western United States. In addition, the ISDRA is recognized for its frequent use as a backdrop for commercials and movies because of its unique beauty and landscape. Very little vegetation is present due to intense OHV use. Manmade modifications in the vicinity of the pipeline route in the Algodones Dunes include I-8, the AAC, new Coachella Canal, and several wood-pole and steel-lattice-tower electric transmission lines traversing the Dunes in an east-west direction. Moreover, wind-deposited sand is expected to mask most remaining visual evidence of the right-of-way within a relatively short period following construction. The VRM objectives for this area in the Algodones Dunes pipeline segment will be met by the proposed Project. Consequently, because there will not be a significant visual impact created by pipeline construction, operation, or maintenance, no mitigation measures are needed beyond those implemented during construction of the A-Line. Effectiveness will be similar.

IID Lateral MP 7.9 to 27.6 – The landscapes that will be crossed by the IID Lateral through the East Mesa are even more uniform than those crossed in 2002 by the A-Line. In this desert landscape environment, a low degree of visual impact will occur initially and be further reduced over time. Adjacent features along most of the length of this route segment include electric distribution and paved roads. Long term impact will be unnoticeable because the pipeline will for the most part be located in county rights-of-way requiring little or no clearing. The VRM objectives for this area in the East Mesa will be met by the proposed Project. Consequently, because there will not be a significant visual impact created by pipeline construction, operation or maintenance in the East Mesa, no mitigation measures are needed beyond those implemented during construction of the A-Line. Effectiveness will be similar.

IID Lateral MP 27.6 to 45.6 – In the agricultural areas of the Imperial Valley, visual impacts will be temporary and very minor. The terrain is flat and agricultural operations will resume following construction. Construction activity will be a short-term visual intrusion to residents along county roadways. Long-term impact will be unnoticeable because the pipeline will for the most part be located in county rights-of-way requiring little or no clearing. Lands in this route segment are not administered by the BLM, and therefore, have no BLM VRM classification.

5.0 BEI LATERAL

The BEI Lateral is a 0.6-mile pipeline located between the Colorado River and I-10. The terrain is flat and uniform. The land is not irrigated and not in active agriculture. Visual impacts will be temporary and very minor. Construction activity will be short-term with activity only partially visible from Riviera Drive. Long term-impact will be unnoticeable with half the pipeline located in county rights-of-way requiring little or no clearing. Therefore, no significant visual impacts will occur. Lands in this route segment are not administered by the BLM, and therefore, have no BLM-VRM classification. No mitigation measures are warranted or proposed.

6.0 ABOVEGROUND FACILITIES

Two new and separate aboveground facilities are proposed: the Blythe and El Centro Meter Stations. Other aboveground facilities will be modified, but the incremental visual change will likely be unnoticeable. Construction of the aboveground facilities will also have a temporary impact on visual resources. The Blythe Meter Station is a new aboveground facility. It will be located approximately 1,000 feet from the closest existing house in a mixed urban/agricultural setting. The aboveground structures will be painted to match the surroundings. Security lighting will be low sodium vapor light angled toward the interior of the station. Because the facility is not located on BLM land, it does not have a VRM classification.

The El Centro Meter Station is a new aboveground facility that will be located in the fenced yard of the existing El Centro Generating Station. It will be a minor industrial addition to a much larger industrial complex. Because the facility is not located on BLM land, it does not have a VRM classification.

The existing Ogilby Meter Station, located in the open desert near I-8, affects the surrounding visual landscape. The presence of construction crews/equipment will be a minor visual disruption. All modifications will be at or near ground level and be visually unobtrusive. The VRM designation for this site, located on BLM-administered land, is Class II. After construction is complete, modifications to the existing Ogilby Meter Station will not be visually evident to casual observers.

During modifications associated with the Ehrenberg Compressor Station, the presence of construction workers and equipment in the Project area will be a minor detraction. All modifications will be at or near ground level and be visually unobtrusive. Because the facility is not located on BLM land, it does not have a VRM classification.

There will be little impact to visual resources resulting from the expansion of the B-Line, new laterals, or aboveground facilities. The right–of-way created by construction of the A-Line has recovered significantly since construction was completed in 2002. Construction of the B-Line will result in an incremental impact that is expected to recover in a similar manner. Pipeline markers will be visible at intermittent locations along the pipeline, but will not detract from the visual quality of the area. The Project will not have a substantial effect on a scenic vista or substantially damage scenic resources within a state scenic highway because none exist in the Project area. Although aboveground facilities will use small floodlights on site, they will not create a new source of substantial light or glare that will adversely affect day or nighttime views in the area.

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FIGURE Q-1

KOP LOCATIONS ALONG THE B-LINE AND IID LATERAL

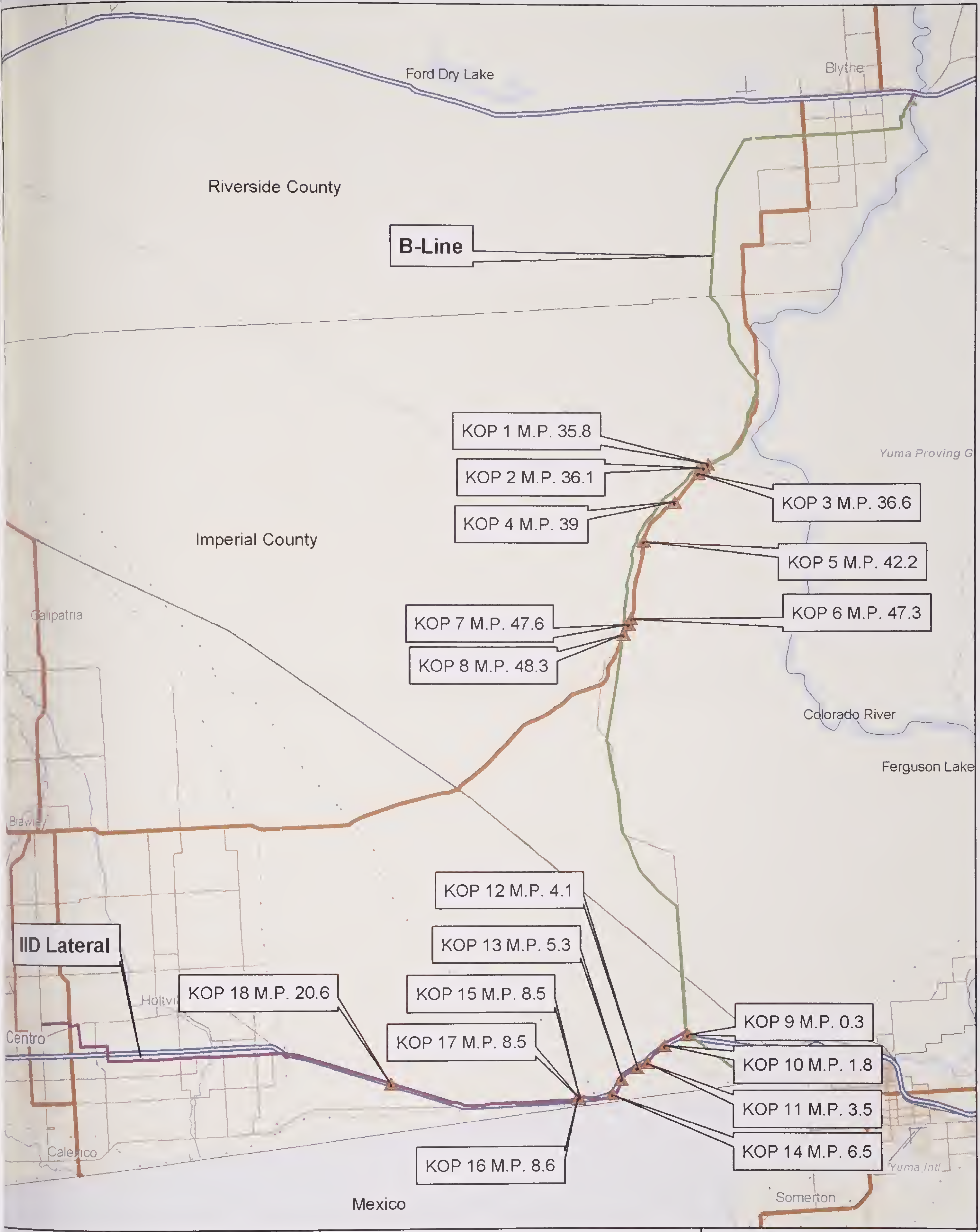


Figure Q-1

KOP Locations Along the B-Line and IID Lateral

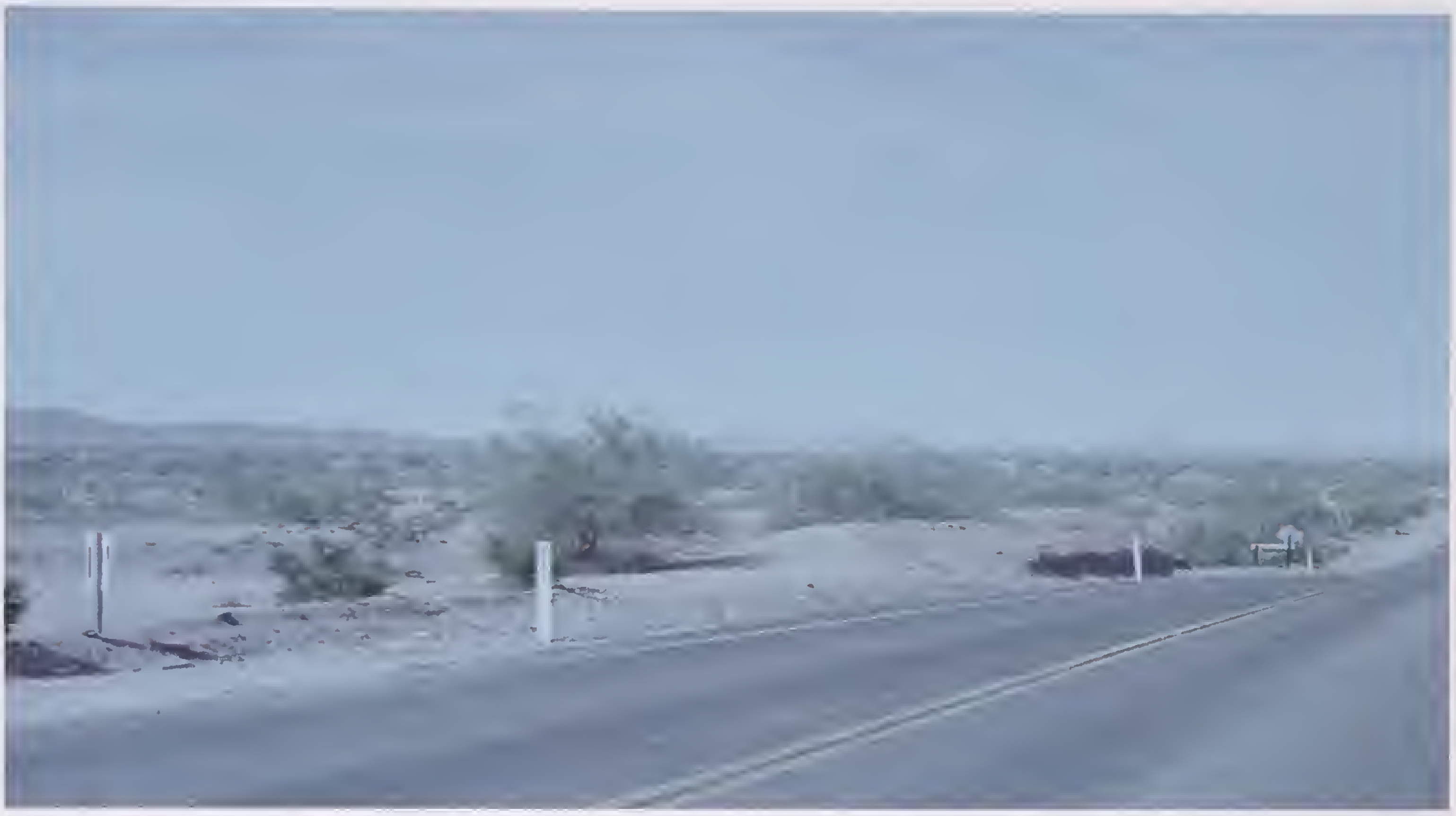
ATTACHMENT A

A-LINE (2001) AND B-LINE (2005) KOP PHOTOS

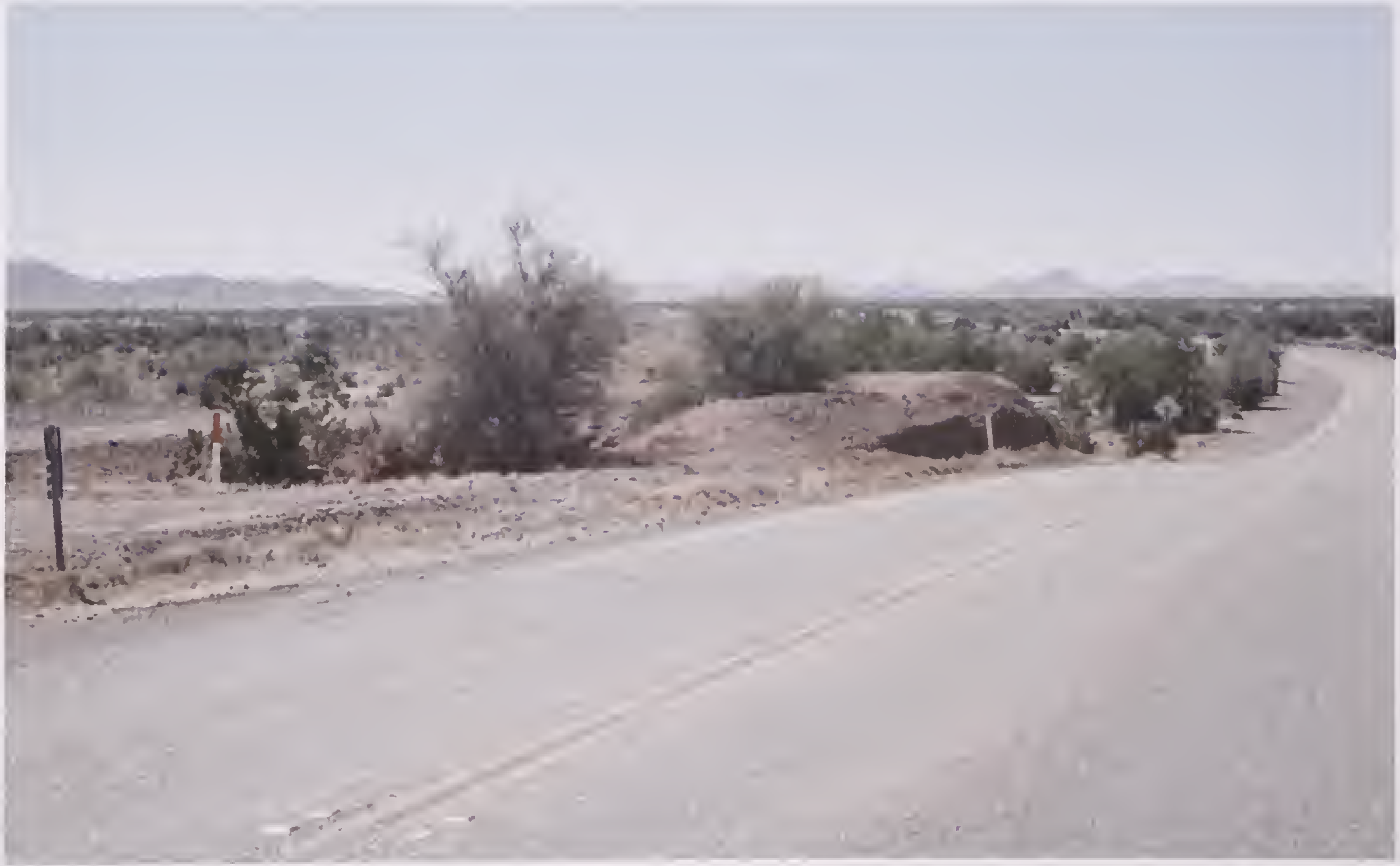
ATTACHMENT A

NORTH BAJA PIPELINE EXPANSION PROJECT A-Line (2001) and B-Line (2005) KOP PHOTOS

KOP 1. Highway 78 at Milpitas Wash looking east-northeast (MP 35.8)

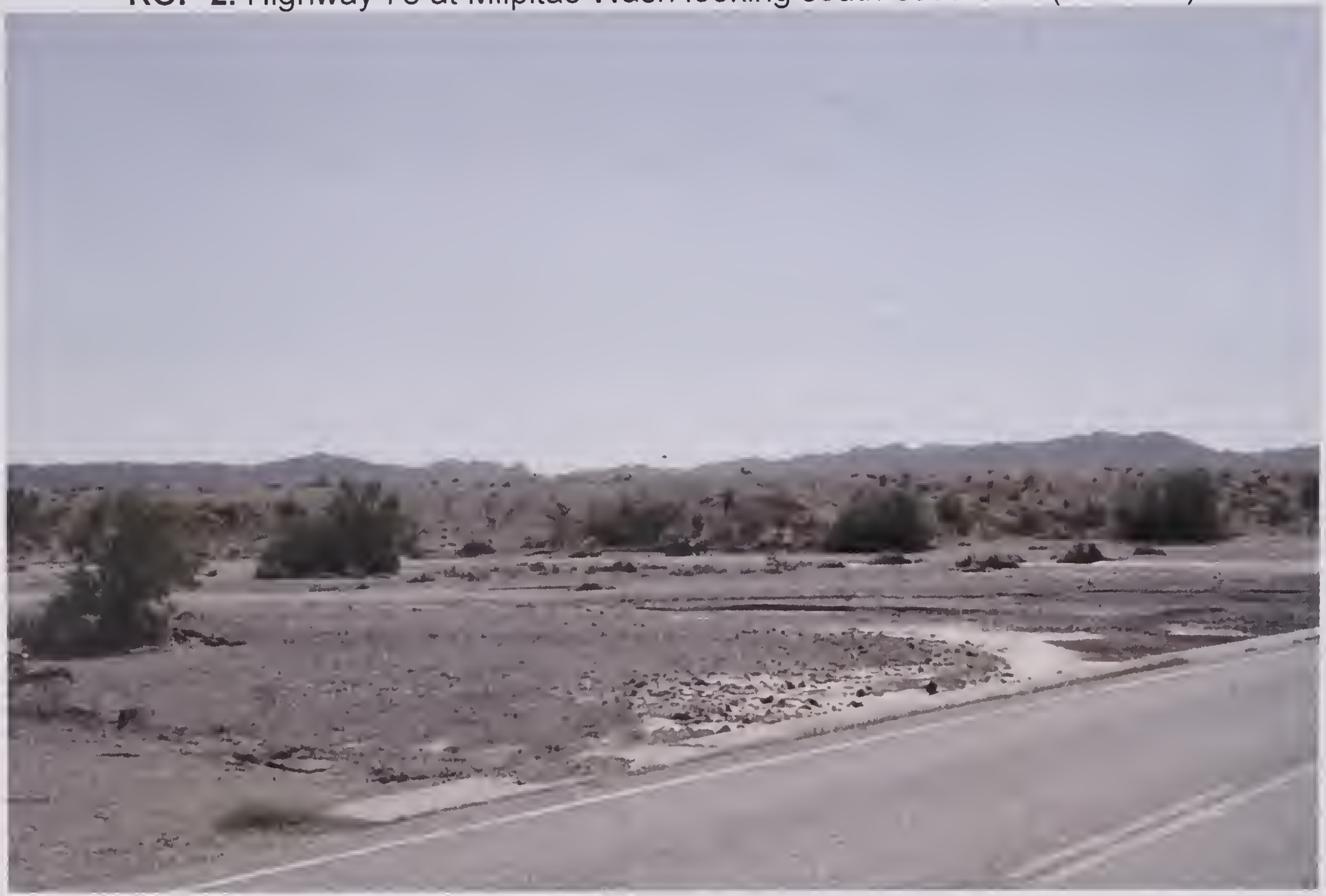


2001 Visual Conditions Before Pipeline Construction



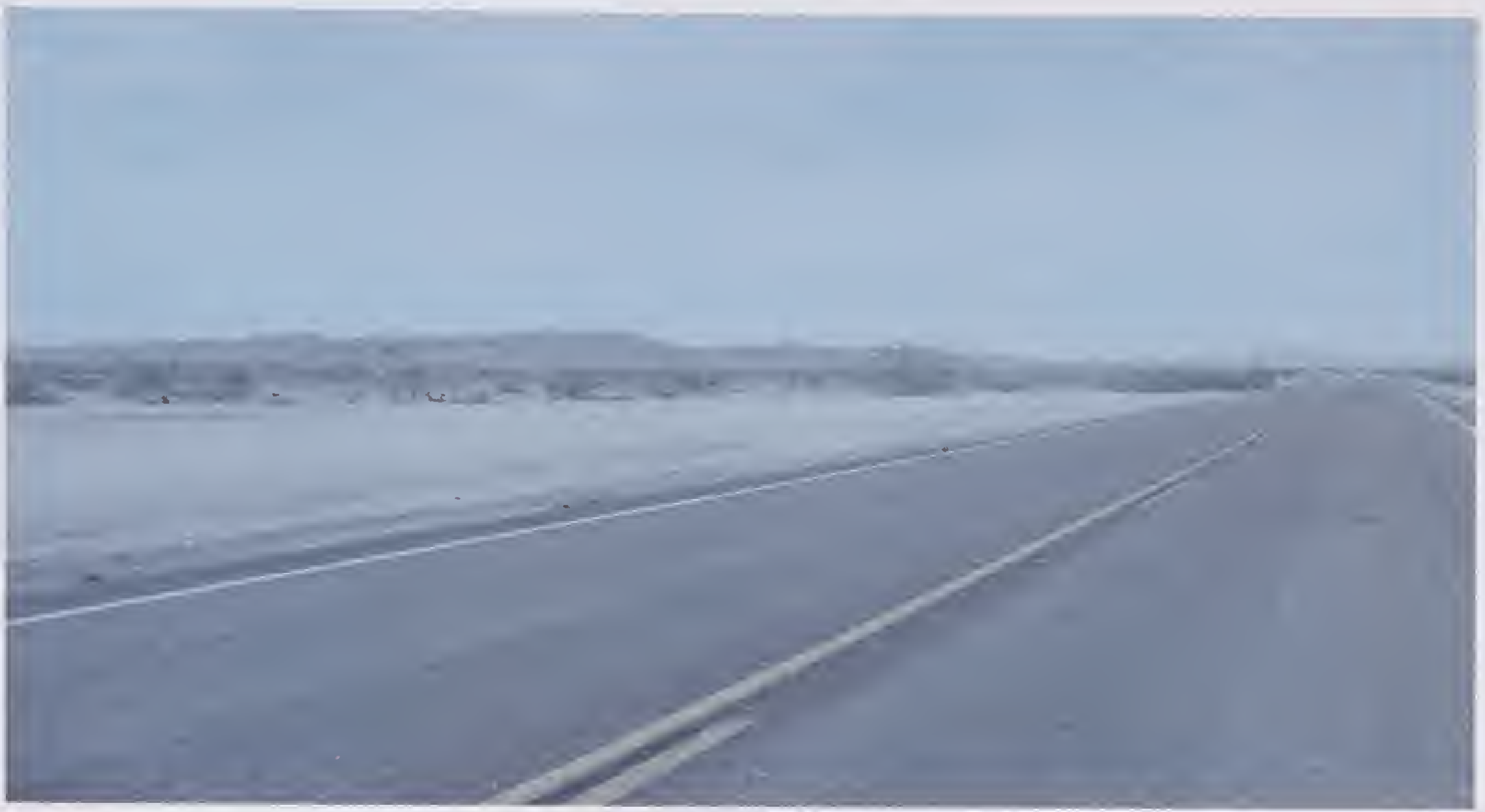
2005 Visual Conditions After Pipeline Construction and Landscape Restoration.

KOP 2. Highway 78 at Milpitas Wash looking south-southeast (MP 36.1)

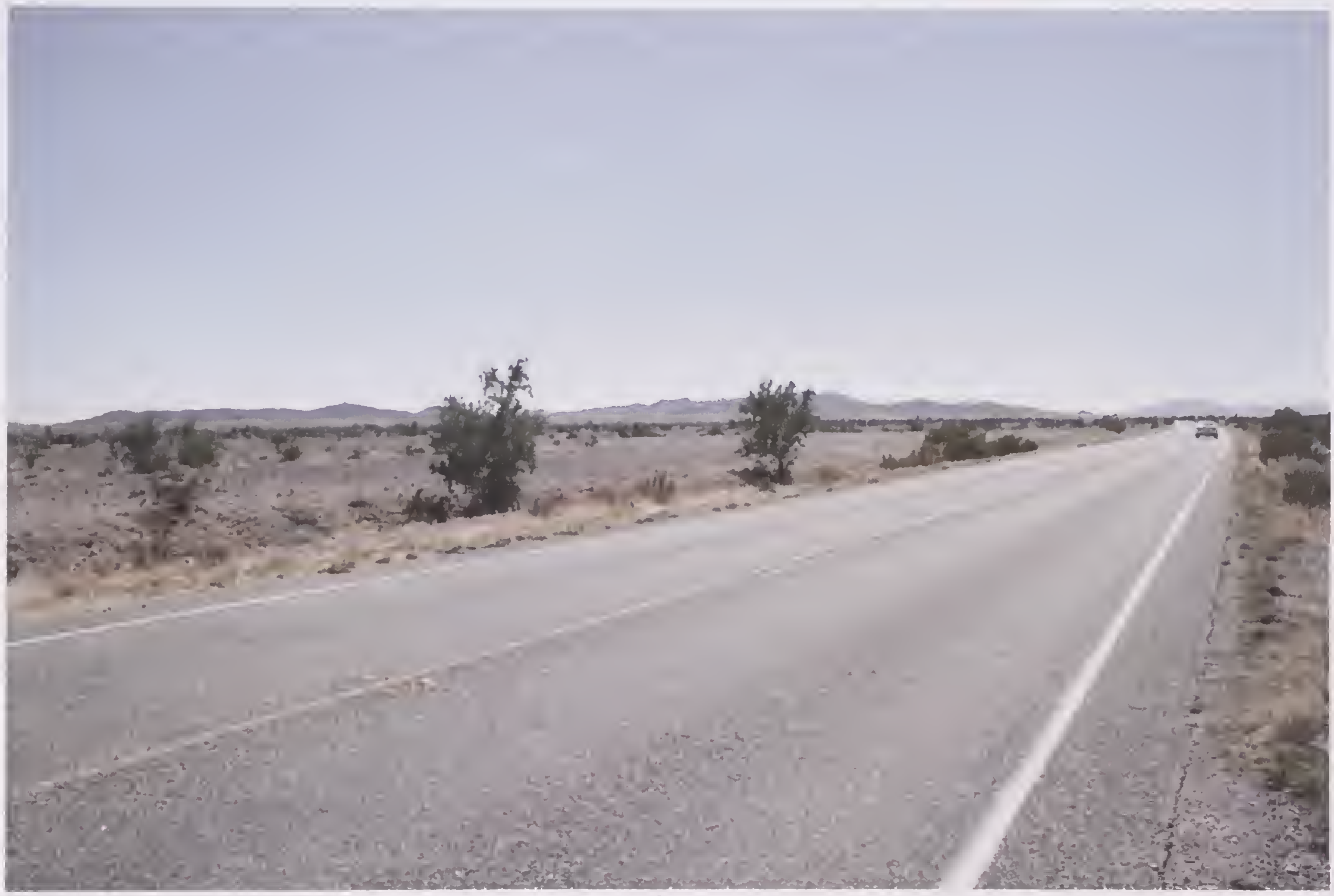


2005 Visual Conditions After Pipeline Construction and Landscape Restoration.

KOP 3. Highway 78 at Milpitas Wash Looking South-Southeast (MP 36.6)

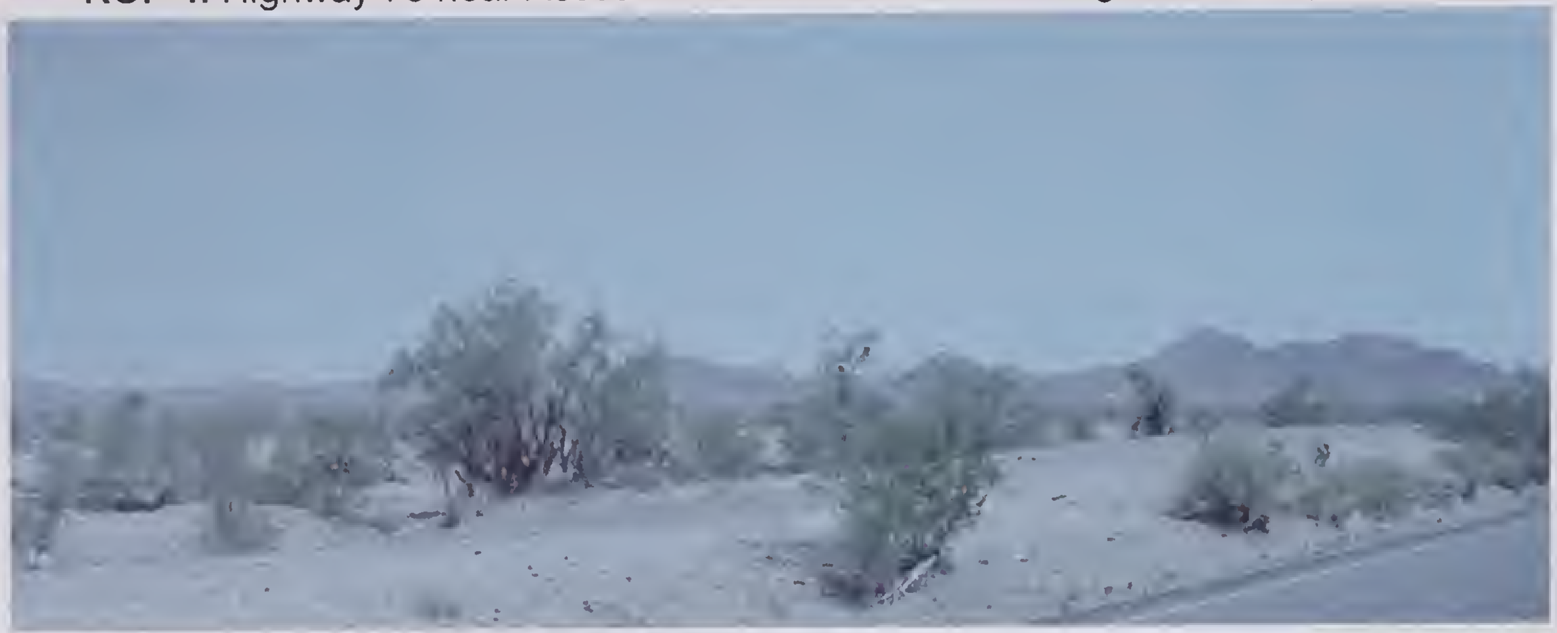


2001 Visual Conditions Before Pipeline Construction

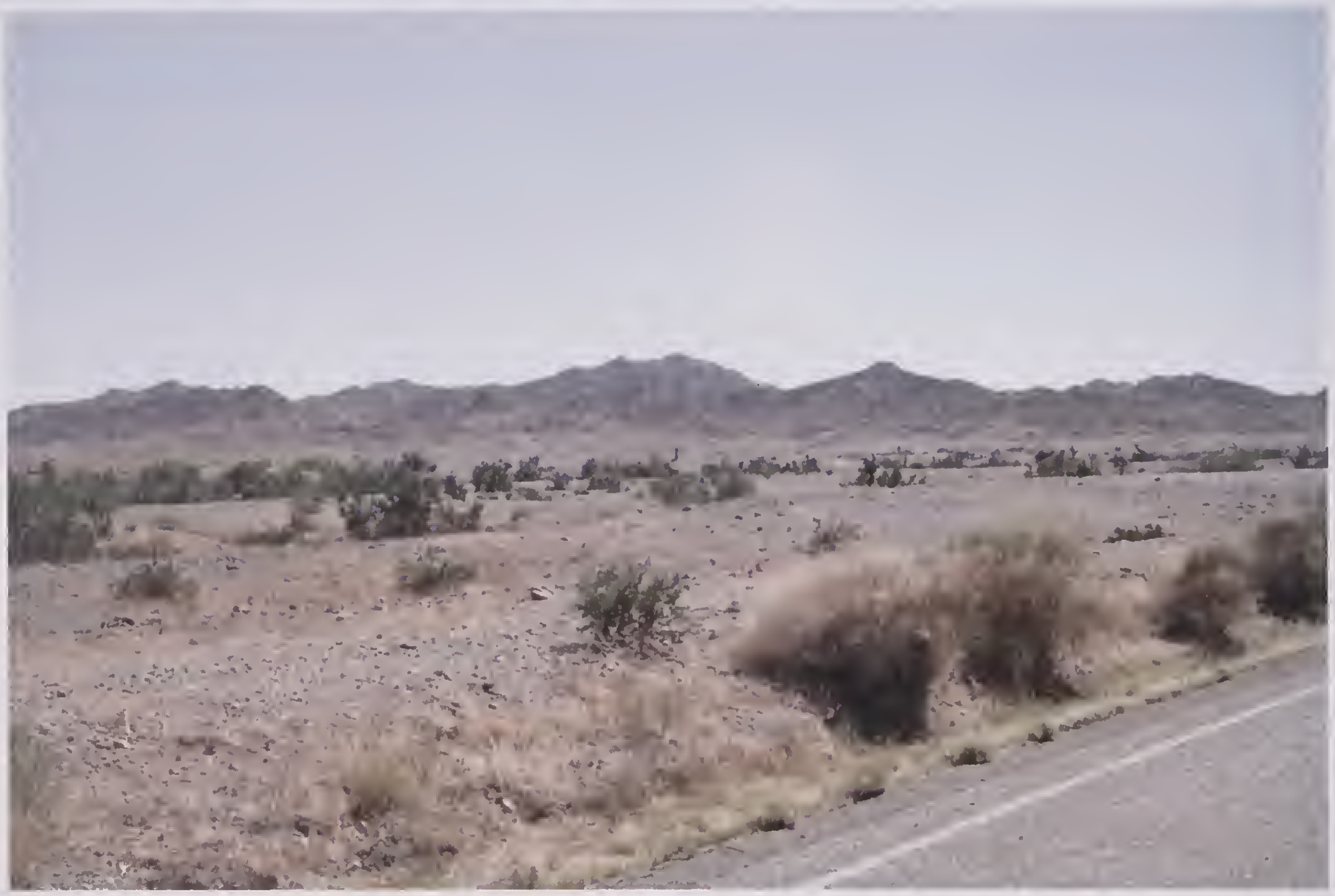


2005 Visual Conditions After Pipeline Construction and Landscape Restoration

KOP 4. Highway 78 near Access Road IMCA-1009 Looking Due East (MP 39.0)

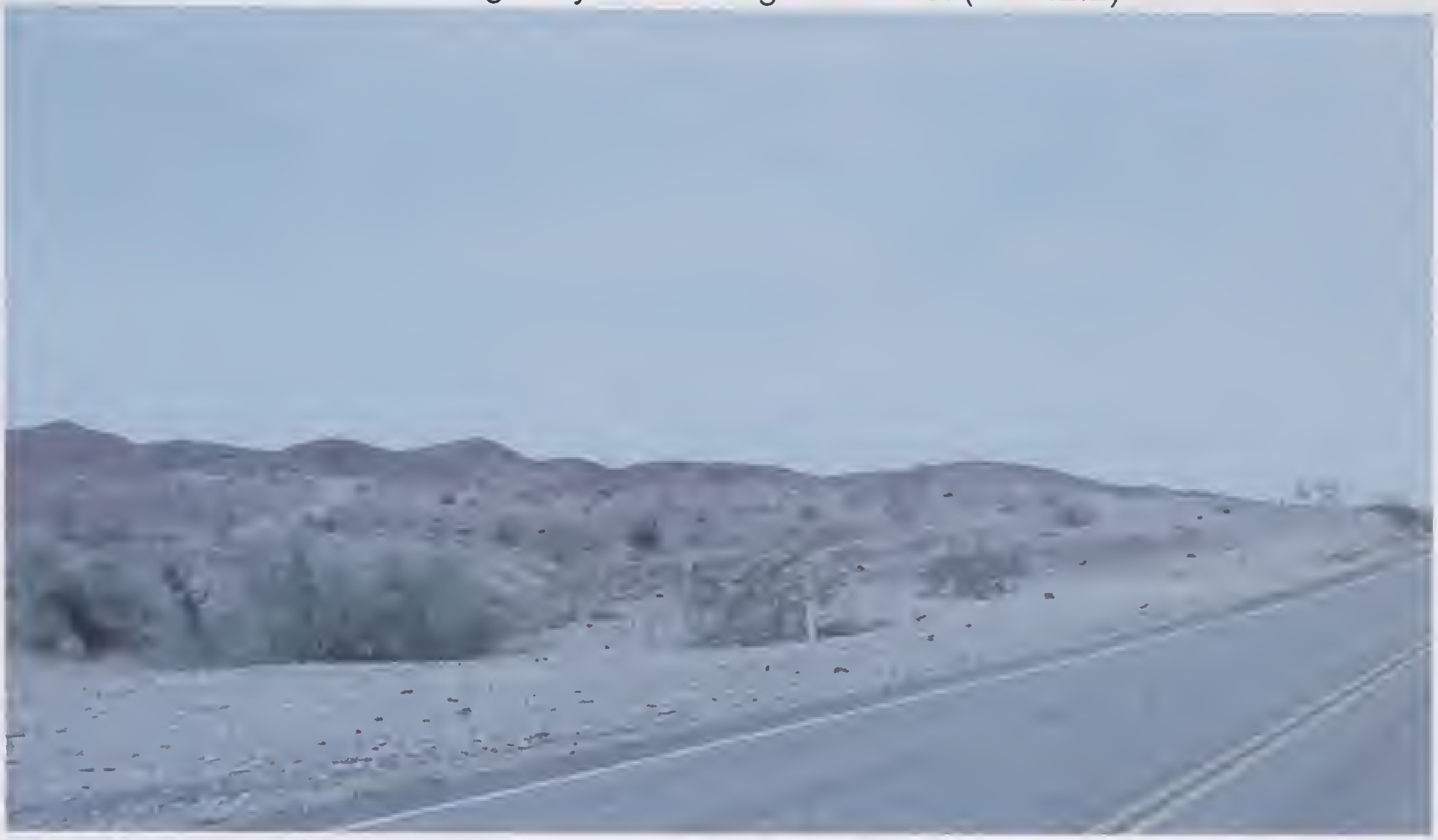


2001 Visual Conditions Before Pipeline Construction.

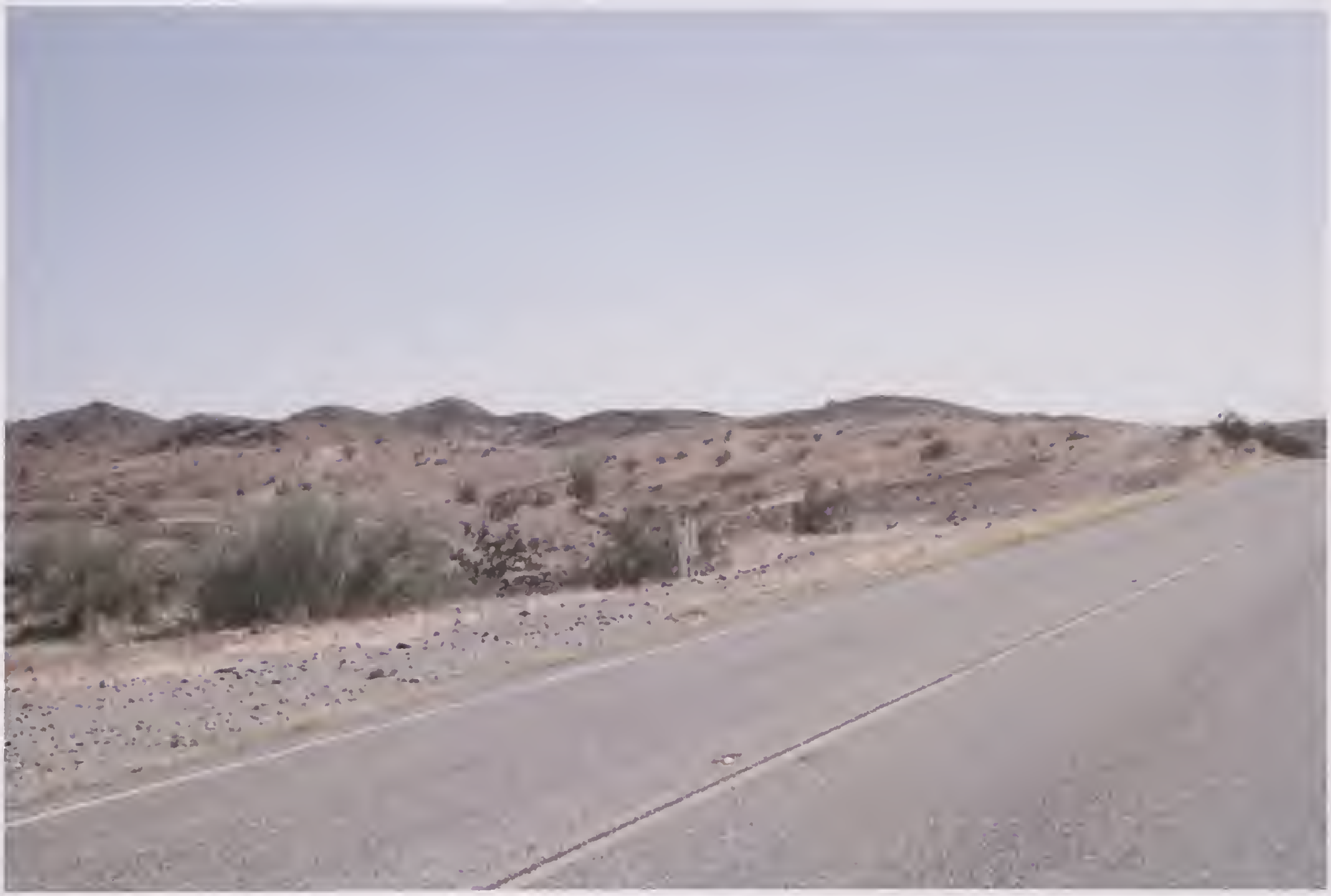


2005 Visual Conditions After Pipeline Construction and Landscape Restoration.

KOP 5. Highway 78 Looking Southeast (MP 42.2)

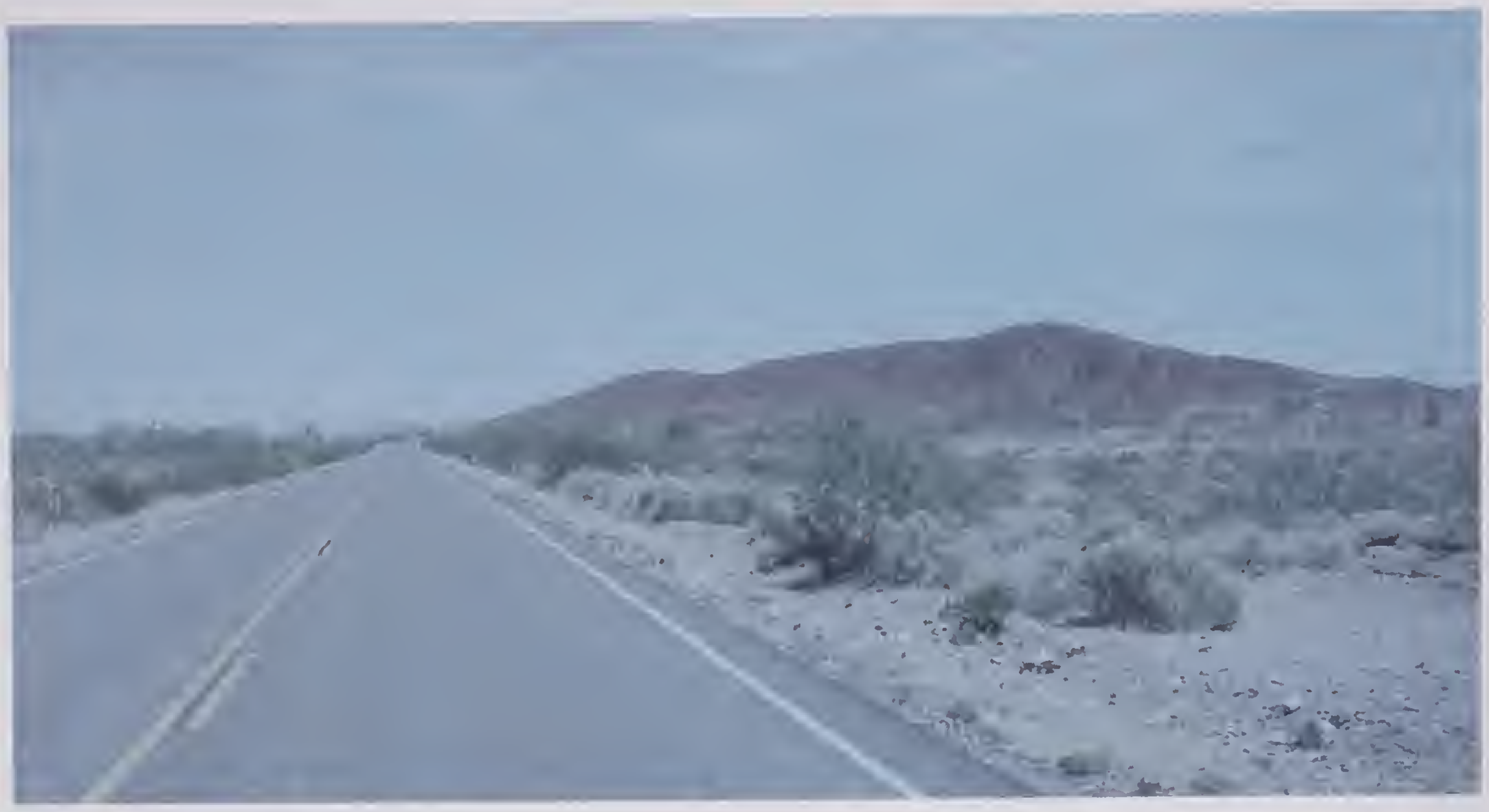


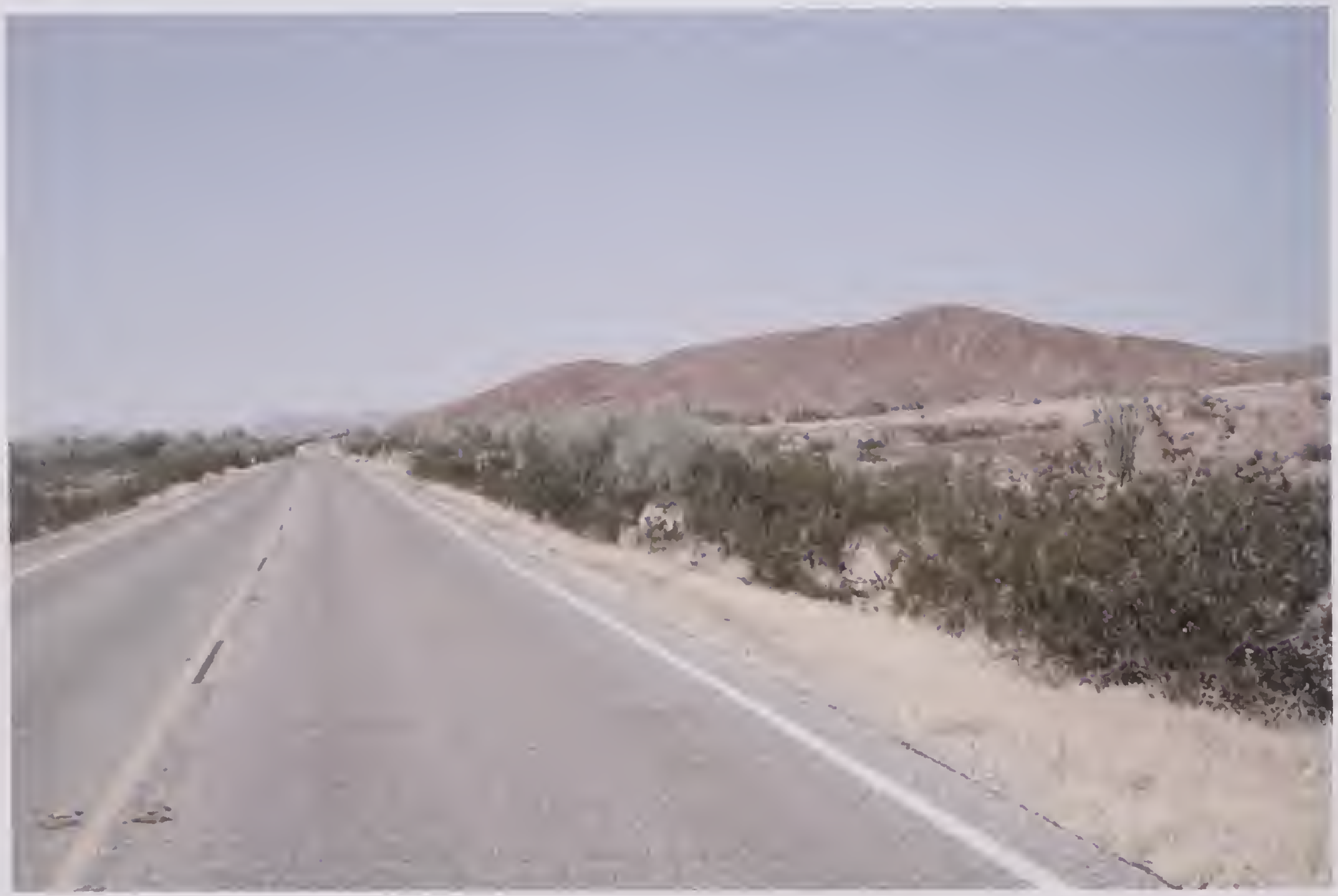
2001 Visual Conditions Before Pipeline Construction.



2005 Visual Conditions After Pipeline Construction and Landscape Restoration.

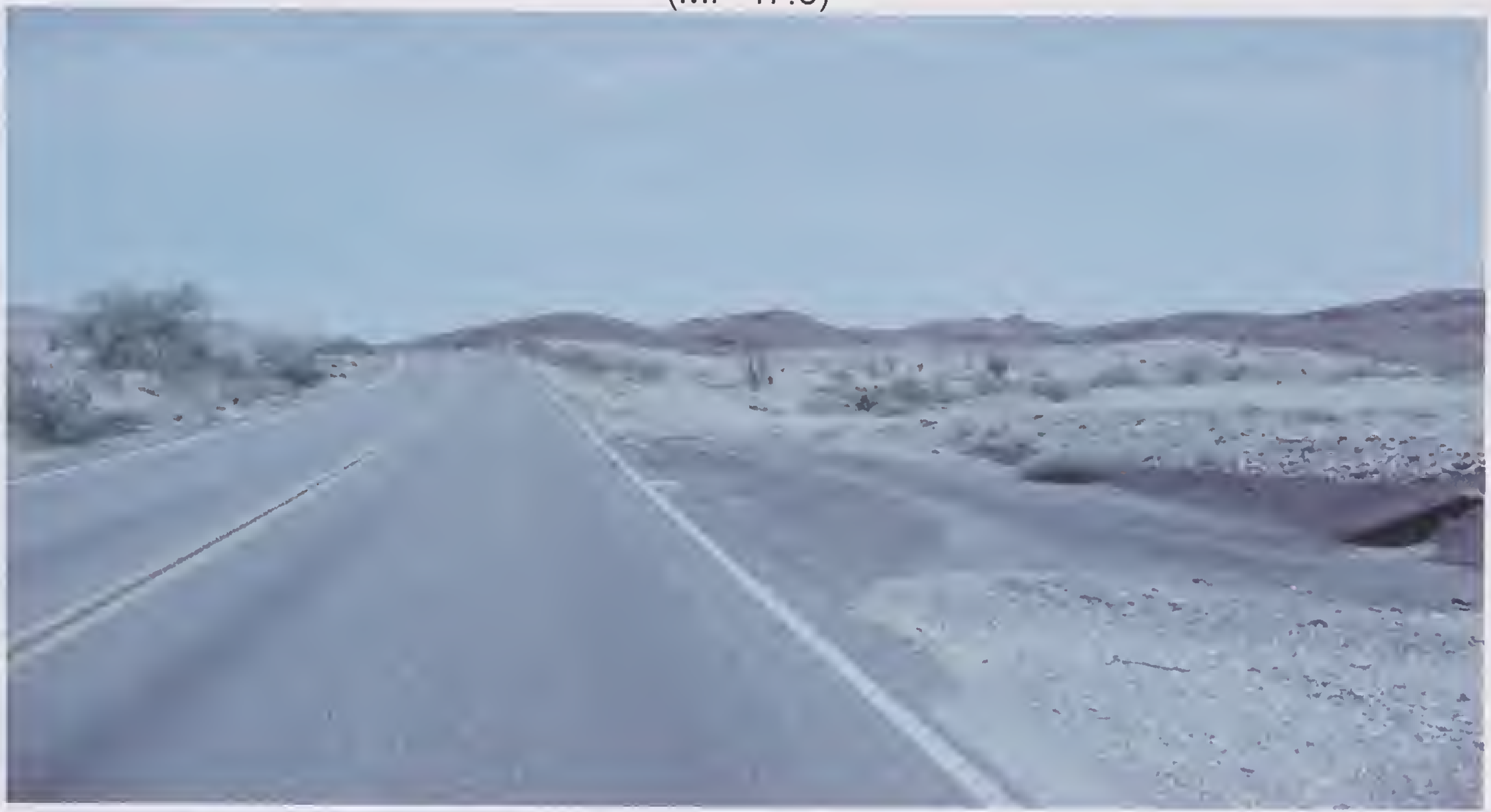
KOP 6. Highway 78 near Access Road IMCA-1037, Looking East-Northeast (MP 47.3)
2001 Visual Conditions Before Pipeline Construction.



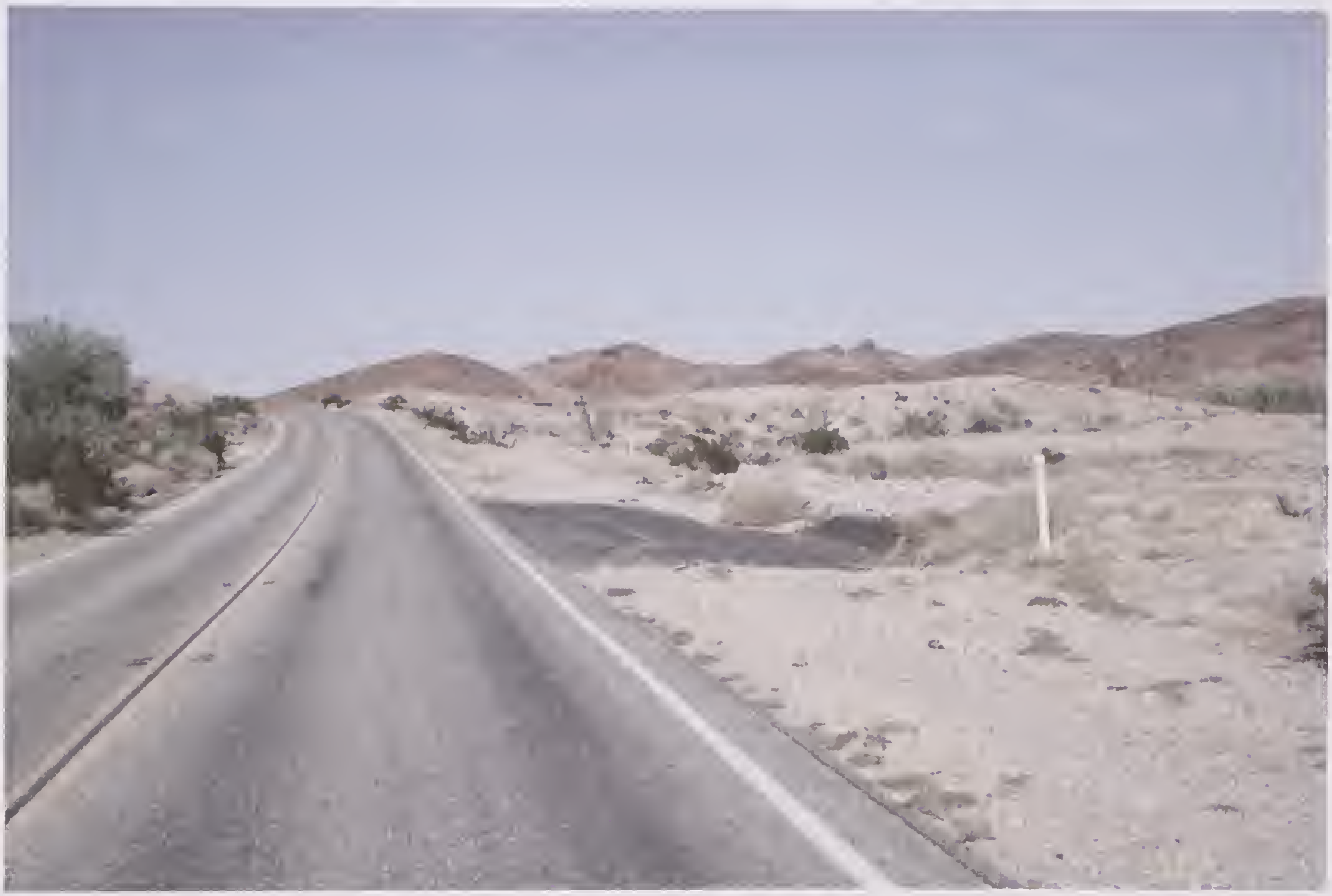


2005 Visual Conditions After Pipeline Construction and Landscape Restoration.

KOP 7. Highway 78 North of the U.S. Border Patrol Checkpoint Station looking Northeast (MP 47.6)

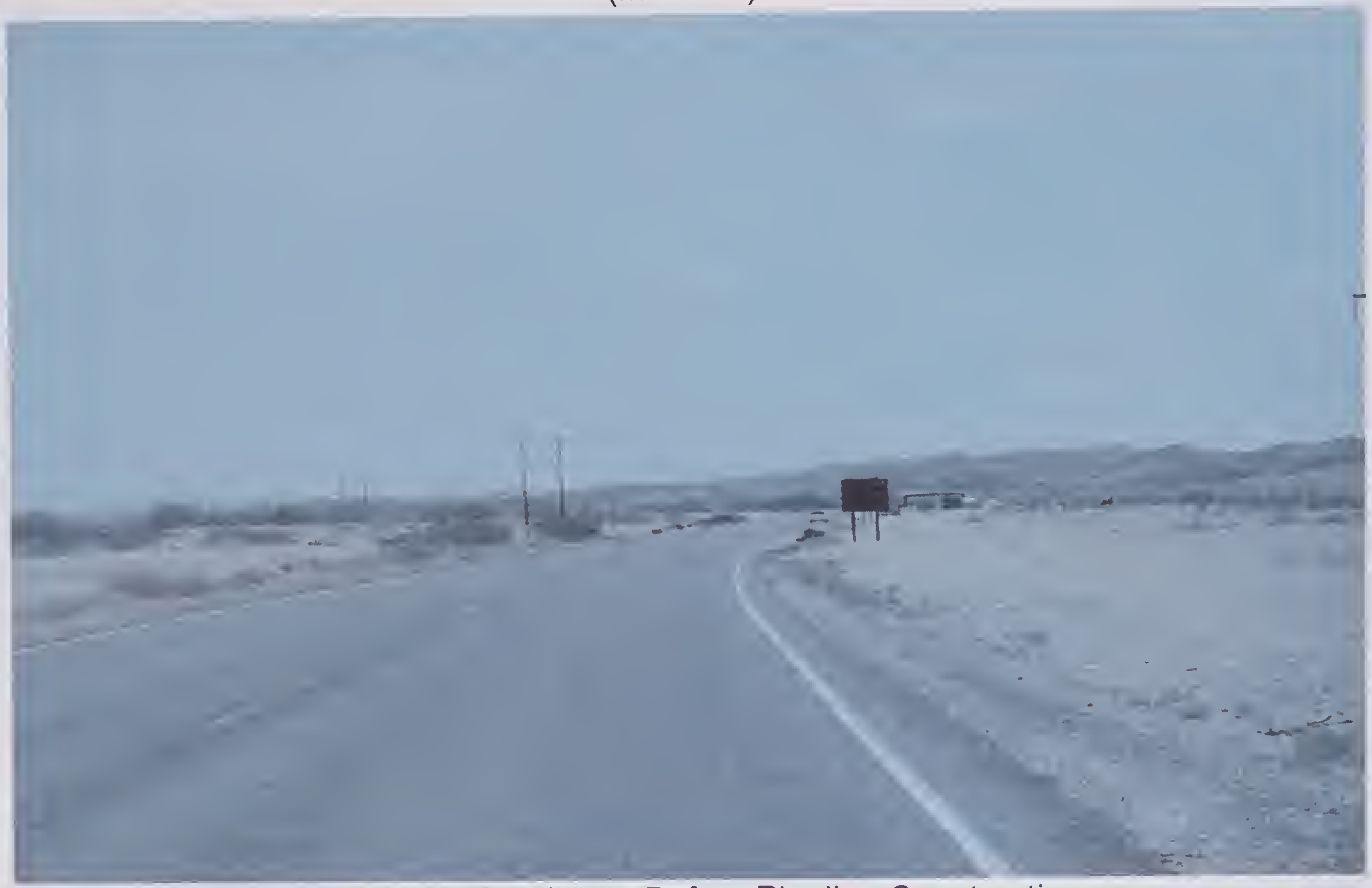


2001 Visual Conditions Before Pipeline Construction.

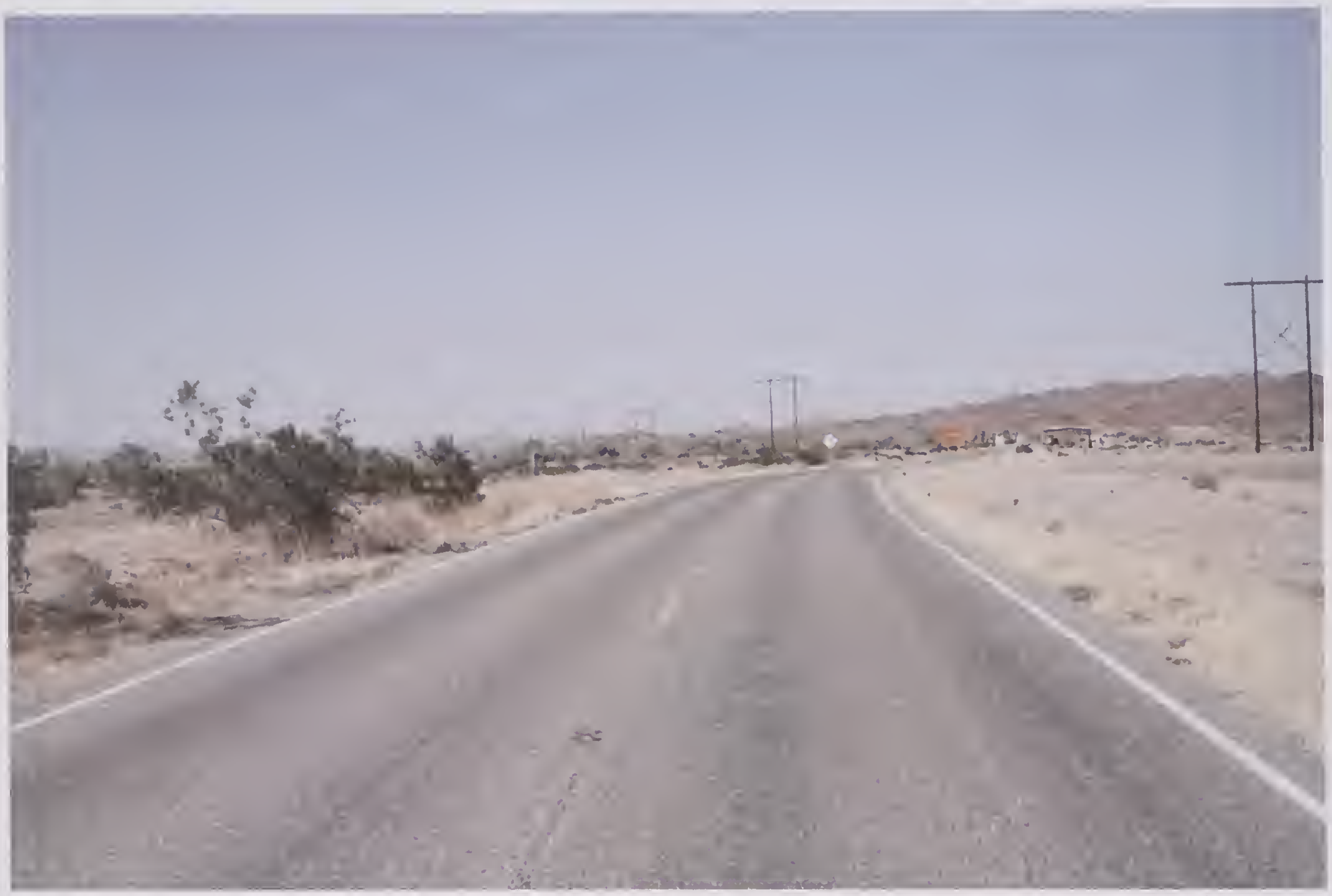


2005 Visual Conditions After Pipeline Construction and Landscape Restoration.

KOP 8. Highway 78 South of the U.S. Border Patrol Checkpoint Station Looking East-Northeast (MP 48.3)



2001 Visual Conditions Before Pipeline Construction.



2005 Visual Conditions After Pipeline Construction and Landscape Restoration.

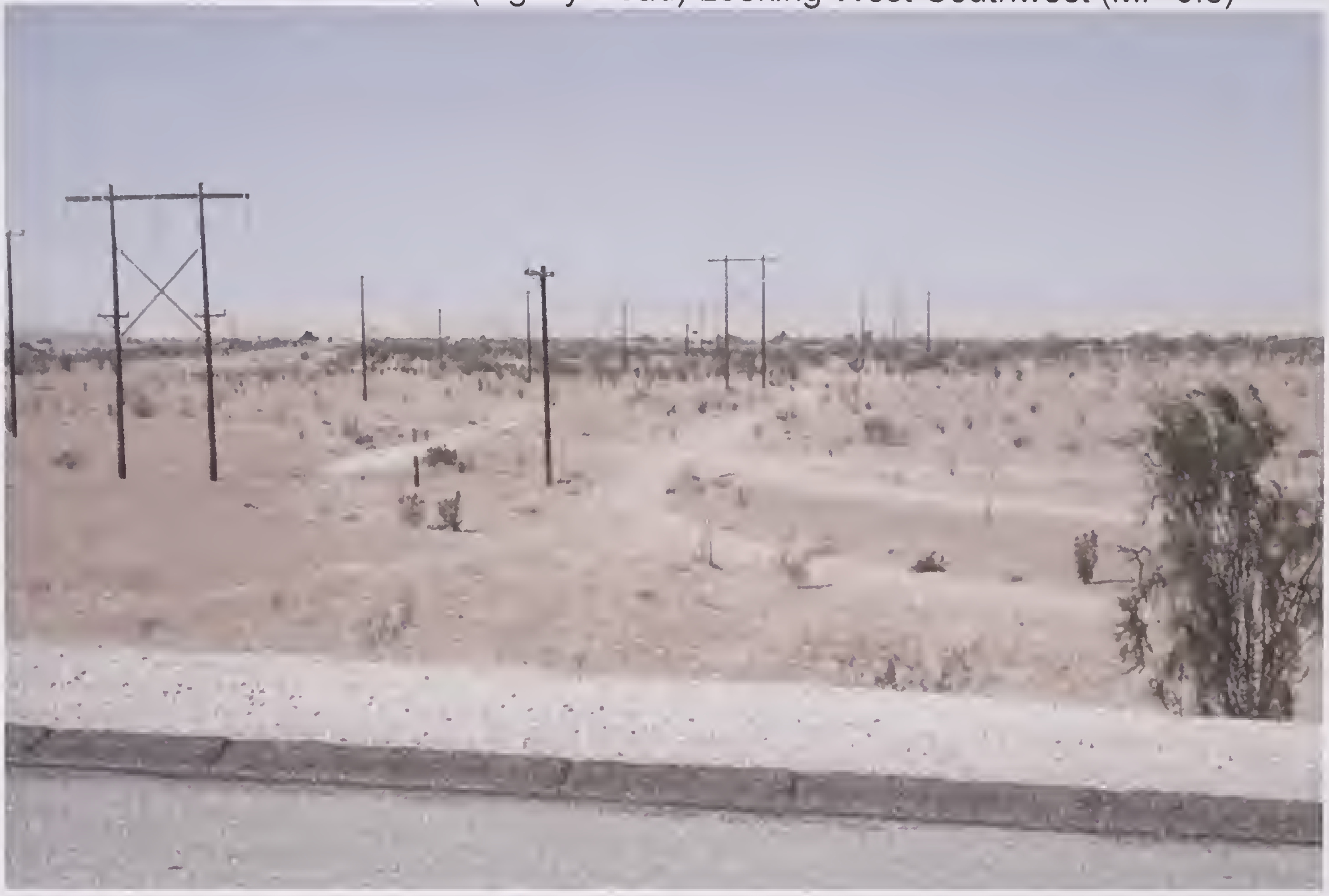
ATTACHMENT B

IID LATERAL (2005) KOP PHOTOS

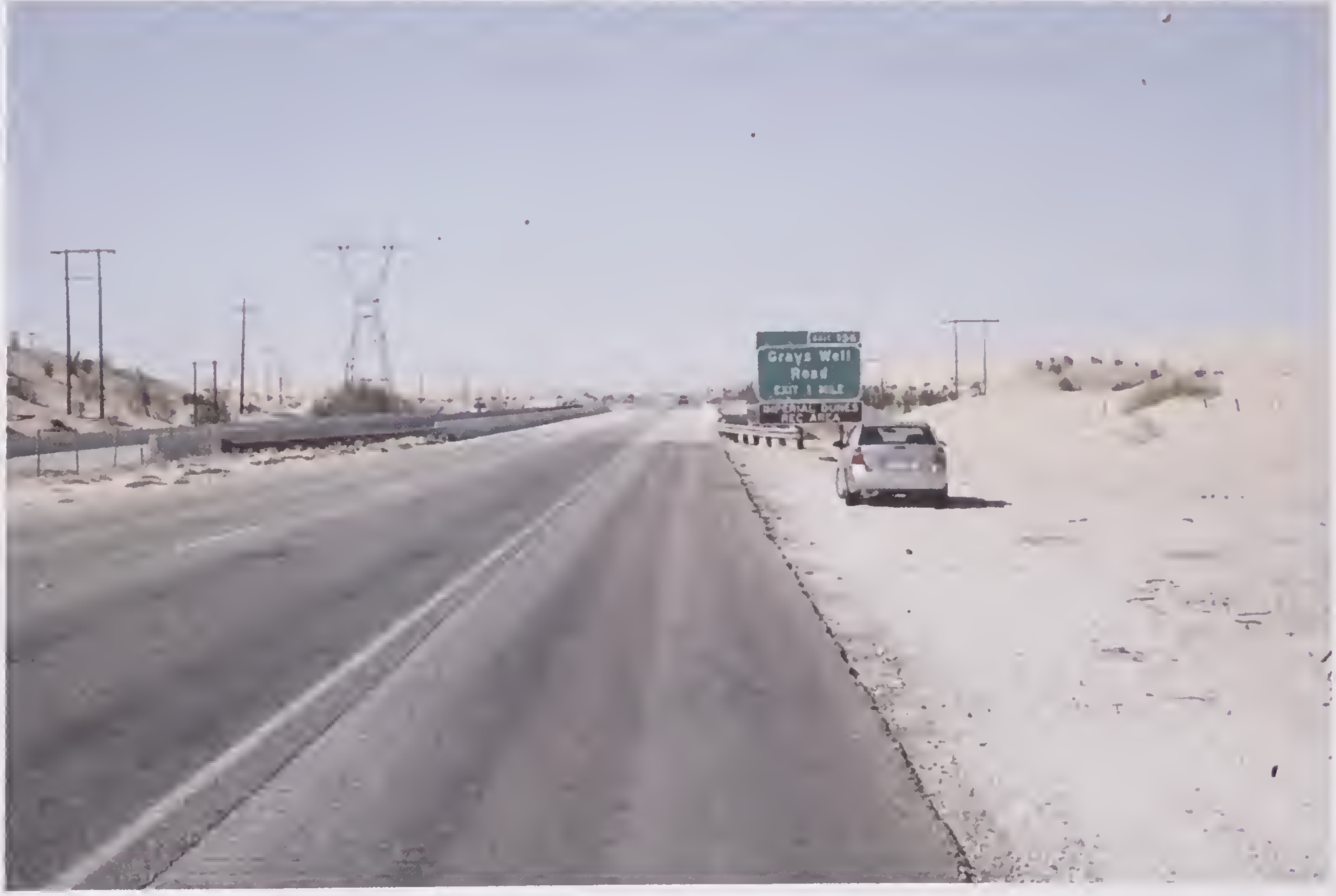
ATTACHMENT B

NORTH BAJA PIPELINE EXPANSION PROJECT
IID Lateral (2005) KOP Photos

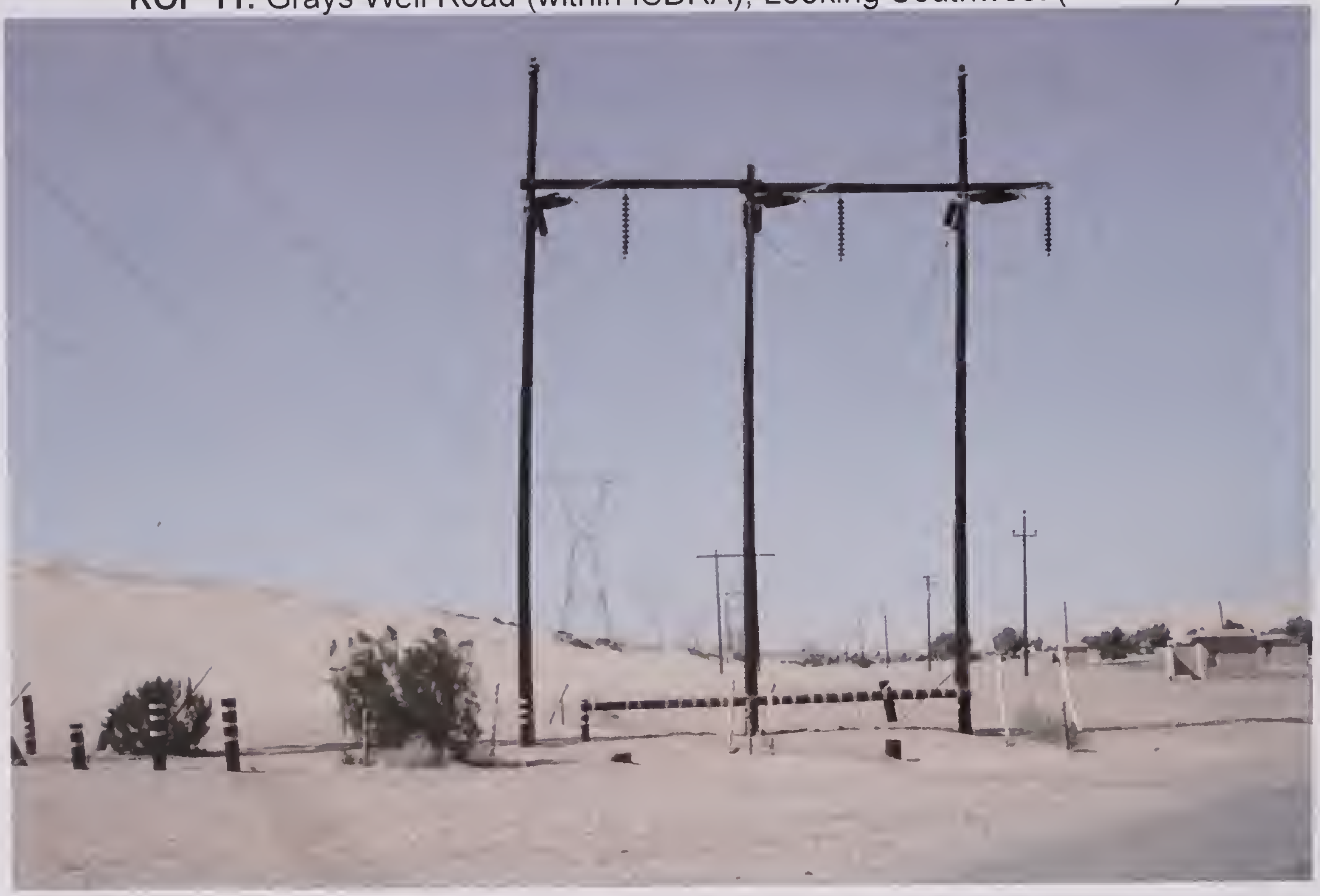
KOP 9. State Route 34 (Ogilby Road) Looking West-Southwest (MP 0.3)



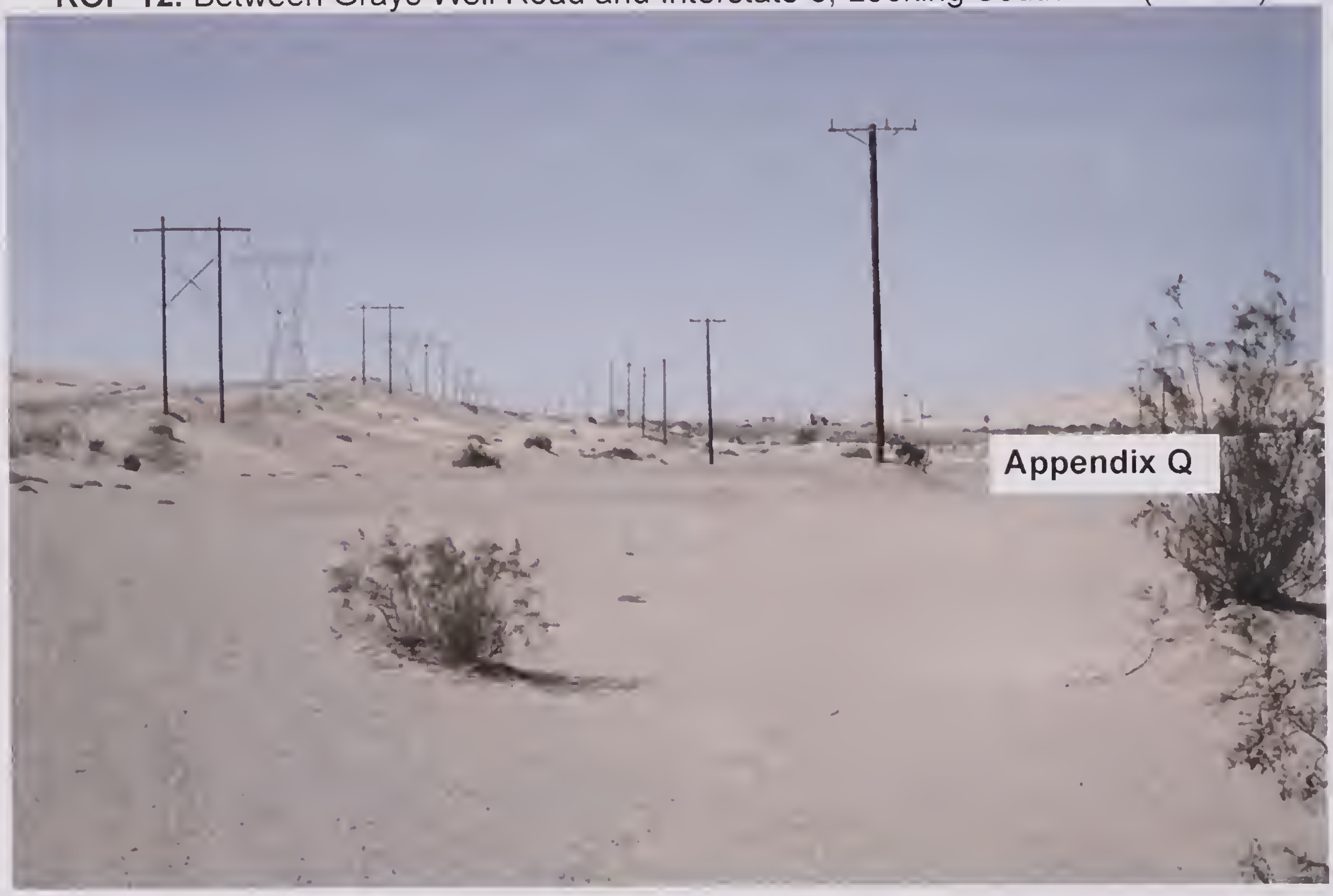
KOP 10. Interstate 8 near Grays Well Road, Looking Southwest (MP 1.8)



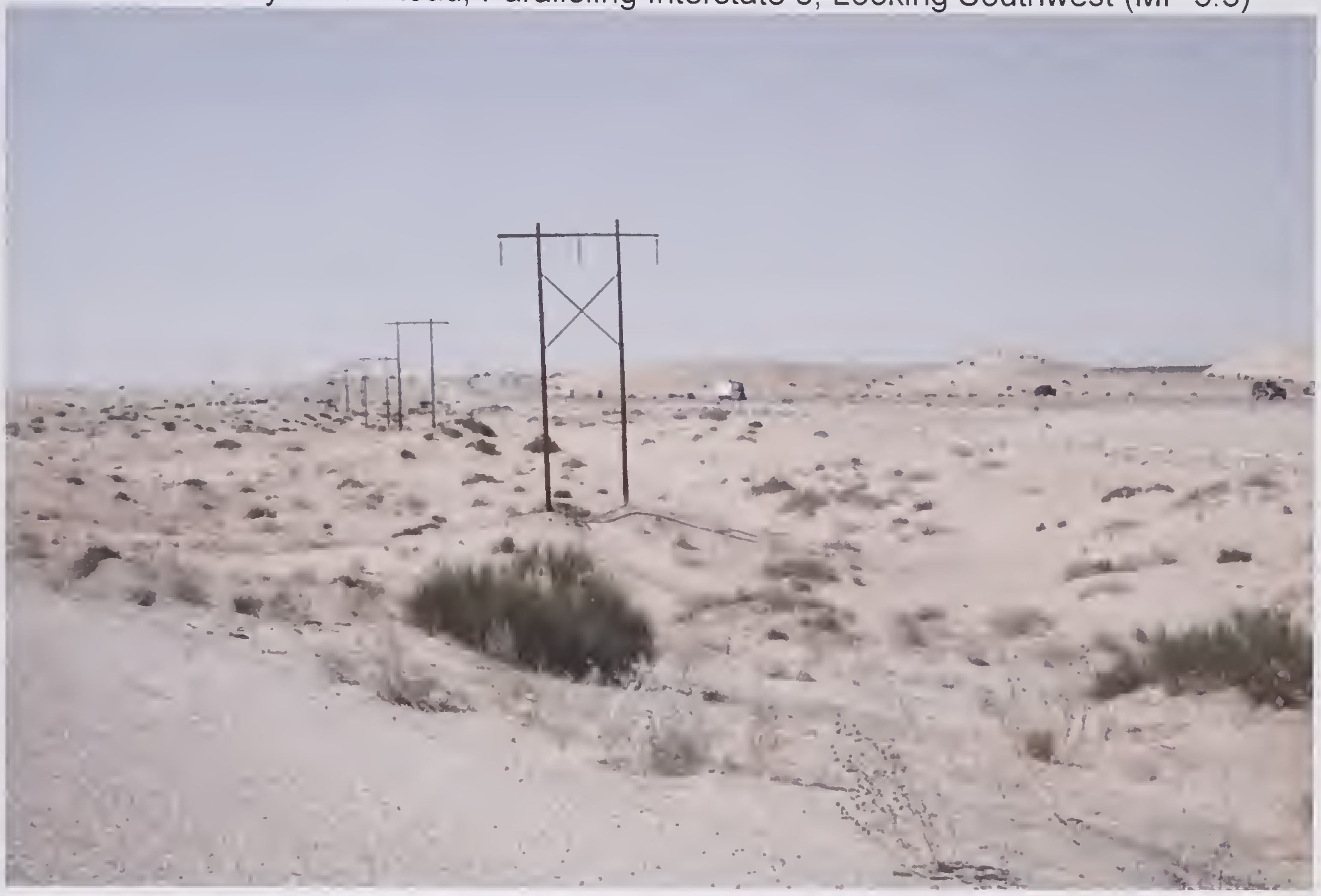
KOP 11. Grays Well Road (within ISDRA), Looking Southwest (MP 3.5)



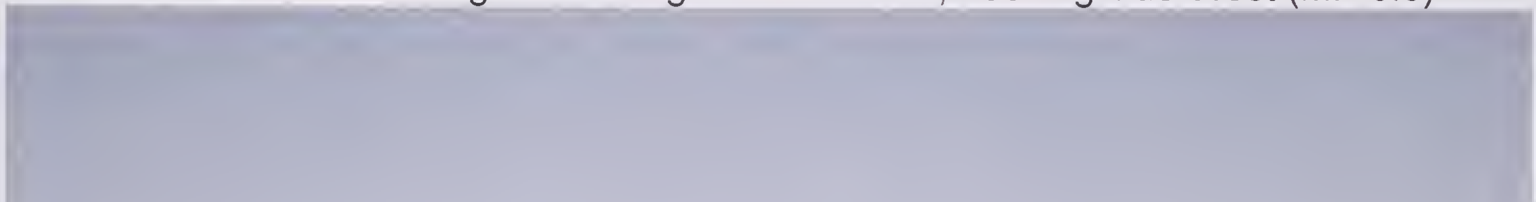
KOP 12. Between Grays Well Road and Interstate 8, Looking Southwest (MP 4.1)



KOP 13. Grays Well Road, Paralleling Interstate 8, Looking Southwest (MP 5.3)



KOP 14. Western Edge of the Algodones Dunes, Looking Due West (MP 6.5)



APPENDIX R

REFERENCES AND CONTACTS

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